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**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
SPARTANBURG DIVISION**

In Re: Fertilizer Group Litigation)	
))	C/A No. 7:01-1001-13 to 7:01-1907-13
))	C/A No. 7:01-3707-13 to 7:01-3742-13
))	
))	MEMORANDUM IN SUPPORT OF
))	MOTION OF IMC TO
))	EXCLUDE EXPERT TESTIMONY
))	OF MICHELLE A. McFADDIN
))	

Defendants, IMC Global Inc. and IMC Global Operations, Inc. (collectively, "IMC"), by counsel, file this Memorandum in Support of its Motion to Exclude evidence presented by Michelle A. McFaddin. McFaddin is an attorney who intends to offer her "expert opinions" on the interpretation of various federal and state environmental laws and regulations and as their application to IMC's plant operations in Spartanburg, South Carolina.

Essentially, McFaddin advocates, in the form of "expert opinion," how this Court should interpret and apply those laws and regulations. Her expert report clearly contains an attorney's musings on how she believes issues in this case should be decided. This is improper. McFaddin's opinions as a lawyer cannot properly assist this Court in making any decisions in this case and are therefore inadmissible and should be excluded under Federal Rule of Evidence 702.

I. Facts

Pursuant to this Court's Scheduling Order of December 11, 2001, Plaintiffs have identified Michelle A. McFaddin as one of their intended trial experts. McFaddin is a lawyer

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who, in her expert report, states that she was hired by Plaintiffs' counsel to "render an expert opinion regarding [IMC's] compliance with certain, federal and state-based environmental regulations and standards at its Spartanburg, South Carolina Plant." (Ex. A at 1.)

Based upon that instruction from Plaintiffs' counsel, McFaddin submitted a 40-page document which, although titled as an expert report, is in fact a legal brief arguing Plaintiffs' theories of law and facts regarding environmental compliance issues. In her "report," McFaddin exhaustively sets forth the facts that Plaintiffs' counsel intend to adduce at trial, and then proceeds to offer her legal opinion. Based upon her understanding of the facts, McFaddin proceeds in her report to interpret various federal and state environmental statutes and regulations and conclude that IMC violated various RCRA provisions, (Ex. A at 25, 32), EPA labeling requirements, (*Id.* at 11), "all applicable hazardous waste requirements," (*Id.* at 23), the "Pollution Control Act," (*Id.* at 31), various South Carolina environmental regulations, (*Id.* at 28, 31), and countless provisions in Title 40 of the Code of Federal Regulations (*Id.* at 12, 19, 21, 28, 32), all "as a matter of law." (*Id.* at 19.)

II. Argument

McFaddin's opinions reflect impermissible and inadmissible interpretation and application of federal and state environmental laws, as well as her opinions regarding IMC's compliance with these regulatory schemes. As such, her opinions and testimony should be excluded.

Federal Rule of Evidence 702 states that a duly qualified expert may testify as to his or her opinion on a particular matter if such evidence "will assist the trier of fact to understand the evidence or to determine a fact in issue." FED. R. EVID. 702. It is a well settled principle of law

that “[t]he meaning of federal regulations is not a question of fact, to be resolved by the jury after a battle of experts. It is a question of law, to be resolved by the court.” *Bammerlin v. Navistar Int'l Trans. Corp.*, 30 F.3d 898, 900 (7th Cir. 1994). *Accord United States v. Bilzerian*, 926 F.2d 1285, 1294 (2d Cir. 1991) (“an expert’s testimony on issues of law is inadmissible”); *Specht v. Jensen*, 853 F.2d 805, 807 (10th Cir. 1988) (“it is axiomatic that the judge is the sole arbiter of the law and its applicability”); *United States v. Zipkin*, 729 F.2d 384, 389 (6th Cir. 1984) (“legal conclusions or principles are not the proper subject of testimony by a witness, and therefore they should have been excluded”). Because no question of fact is presented here, McFaddin’s testimony is improper and inadmissible.

In *Adelman v. Baker, Watts & Co.*, 807 F.2d 359 (4th Cir. 1987), the Fourth Circuit addressed the trial court’s exclusion of proffered testimony on whether, under federal securities laws, the disclosure of a particular fact was required by the defendant in the course of negotiating a business transaction. The Fourth Circuit ruled that, while the defendant’s security law expert properly could have testified to the “step by step practices” followed by lawyers and corporations in activities regulated by securities laws, the trial court properly excluded any opinions from the expert as to whether any of those steps were required by securities laws. *Id.* at 367-68. In so holding, the Fourth Circuit noted:

[U]nder our system it is the responsibility - and the duty - of the court to state to the jury the meaning and applicability of the appropriate law, leaving to the jury the task of determining the facts which may or may not bring the challenged conduct within the scope of the court’s instruction as to the law.

Under circumstances involving domestic law, this court can conceive of no circumstances which would shift the burden from the court to the jury, where the jury judgment would be influenced, if not made, on the basis of expert testimony which would undoubtedly follow the usual pattern of conflicting expert opinions. Permitting such testimony as to legal conclusions gives

cogent meaning to the apprehensions that jurors will turn to the expert, rather than to the judge, for guidance on the applicable law.

Adelman, 807 F.2d at 366.

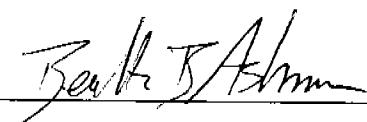
McFaddin's opinions fall squarely within the prohibition against witness testimony on issues of law. Her only apparent "expertise" is that she is an attorney. She brings nothing "more than the lawyers can offer in argument." *In re Air Crash Disaster at New Orleans, La.*, 795 F.2d 1230, 1233 (5th Cir. 1986). Her report appears in substance and style like any other legal brief submitted to this Court -- less citations for her legal conclusions -- and is replete with explicit opinions regarding the nature and extent of IMC's alleged violations of various environmental statutes and regulations. McFaddin's opinions are patently inadmissible as "expert legal opinion" and should be excluded by this Court under Federal Rule of Evidence 702.

III. Conclusion

For the foregoing reasons, IMC respectfully requests that the Court grant its Motion to Exclude from the trial of this matter the opinions of Plaintiffs' expert witness, Michelle A. McFaddin.

Respectfully submitted,

**IMC GLOBAL, INC. and
IMC GLOBAL OPERATIONS, INC.**

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CERTIFICATE OF SERVICE

I hereby certify that a true and exact copy of the foregoing **MEMORANDUM IN SUPPORT OF MOTION OF IMC TO EXCLUDE EXPERT TESTIMONY OF MICHELLE A. McFADDIN** was delivered by facsimile and by first class mail, postage prepaid, the 14 day of March 2002 to the following counsel for plaintiffs:

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EXHIBIT A

EXPERT REPORT:

Environmental Permitting and Compliance History
(International Mineral & Chemicals Corporation - Spartanburg, South Carolina)

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(February 14, 2001)

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EXHIBITS

Exhibit "A"	List of Documents relied upon in Expert Report
Exhibit "B"	Current Curriculum Vitae for Michelle A. McFaddin, J.D.
Exhibit "C"	EPA Administrative Order on Consent (July, 2001)
Exhibit "D"	IMC EPA Facility Annual Hazardous Waste Report (1983)
Exhibit "E"	List of Records produced by IMC (2001)
Exhibit "F"	Laboratory Results (Atlantic Steel): K061 Furnace Dust
Exhibit "G"	Laboratory Results (Tri Chem, IMC): K061 Dust
Exhibit "H"	IMC's EPA Part A Hazardous Waste Permit Application (1980)
Exhibit "I"	IMC-Spartanburg Diagram with Notes (September 4, 1981)
Exhibit "J"	IMC Authorization Request (June 30, 1983)
Exhibit "K"	SCDHEC letter to IMC: Corrective Action; Questionnaire
Exhibit "L"	IMC Revised Hazardous Waste Closure Plan (July, 1986)
Exhibit "M"	Versar, Inc. Closure Certification Report (December, 1986)
Exhibit "N"	EPA Guidance: Closure Certification Requirements (November, 1987)
Exhibit "O"	EPA-Region 4 Memorandum: Trip Report (August 29, 1997)
Exhibit "P"	EPA-Region 4 letter to CT&C: CERCLA Preliminary Assessment

Exhibit "Q"	SCDHEC Inspection/Investigation Report (June 26, 1998)
Exhibit "R"	EPA-Region 4 letter to IMC Agribusiness (September 16, 1998)
Exhibit "S"	IMC Global letter to EPA-Region 4: IMC Site (March 6, 1999)
Exhibit "T"	EPA-Region 4 letter to IMC Global: Comments (May 25, 1999)
Exhibit "U"	Vigindustries, Inc. Compliance Agreement #99-053-A (July, 1999)
Exhibit "V"	EPA-Region 4 letter to SCDHEC: NPL-Caliber Site (August 25, 2000)

I. Introduction

This expert report was prepared at the request of the law offices of Hilliard & Heald, L.L.P. in connection with the *In Re: Fertilizer Group* litigation pending before The Honorable Judge G. Ross Anderson, Jr. in the U.S. District Court for the District of South Carolina's Spartanburg Division [Cause No. 7-01-1001-13 through 7:01-1907-13 and Cause No. 7:01-3707-13 through 7:01-3742-13]. I have been asked to render an expert opinion regarding International Minerals & Chemical Corporation and its subsidiaries' compliance with certain, federal and state-based environmental regulations and standards at its Spartanburg, South Carolina plant both before and around the time of the plant's closure in 1986 and 1987.

The opinions set forth in this report are based upon a review of federal and state environmental statutes, agency rules, regulations and policies as well as upon a review of records compiled and maintained by the following federal and state agencies: a) the U. S. Environmental Protection Agency ("EPA"); and b) the South Carolina Department of Health and Environmental Control ("SCDHEC"). In addition, I have reviewed documents produced by International Minerals & Chemical Corporation and its subsidiaries, hereinafter referred to as "IMC", in this litigation as well as deposition testimony obtained from the plant's environmental manager, Glenn A. Feagin, and the registered professional engineer that certified the closure of the IMC-Spartanburg facility, Dr. Sid Davis. These documents and this deposition testimony also contain information on which the expert opinions in this report have been based. A list of the documents relied upon in drafting this report is appended as Exhibit "A".

I am an environmental attorney with previous, management-level work experience at both the Railroad Commission of Texas and the Texas Water Commission, a predecessor agency to the Texas Natural Resource Conservation Commission. I was initially employed by the Texas Water Commission as a staff attorney for the water quality and hazardous waste programs in January, 1987. I was promoted to the position of Senior Attorney for the hazardous waste, federal/state Superfund, underground injection control and spill response programs, the equivalent of an assistant division director position, in November, 1988. I held this position until May 3, 1991, when I transferred to the Railroad Commission of Texas' Legal Division as the Assistant Division Director of Enforcement. The Railroad Commission of Texas regulates oil and gas production and transportation, pipeline safety, surface mining, LP Gas and gas utilities within the State of Texas.

Since March, 1992, I have been employed as the part owner of an environmental consulting firm and as a self-employed, environmental attorney. I represent clients before the Texas Natural Resource Conservation Commission, the Railroad Commission of Texas, the U.S.E.P.A. and the Federal Energy Regulatory Commission. In addition, I am employed as a environmental/regulatory affairs consultant. A copy of my current curriculum vitae is attached as Exhibit "B" to this report.

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II.

History of the IMC-Spartanburg, South Carolina Facility

A. History of the IMC-Spartanburg Plant's Operations; Activities (1910-1987)

The IMC-Spartanburg, South Carolina facility was constructed around 1910 by a predecessor-in-interest to International Minerals & Chemical Corporation, International Agriculture Company,¹ and was operated as a phosphate-based, fertilizer manufacturer until January, 1987. The former plant occupies an area of approximately 40 acres and is located at the end of North Street outside the city limits of Spartanburg, South Carolina in a community commonly referred to as the "Awkright" community. The IMC-Spartanburg site is bounded on the east by Fairforest Creek, to the south by residences, Rhodia Chemical Company and the Awkright Dump, to the west by railroad tracks and to the north by undeveloped land and portions of Fairforest Creek. The site is located in close proximity to residential homes with approximately 4,712 people residing within one (1) mile of the facility.² Within a four (4) mile radius of the plant, approximately 1,560 residents obtain drinking water from private drinking water wells that draw from shallow, surficial aquifers. The nearest residence that obtains drinking water from a private, water well is located less than 200 feet south of IMC at 503 North Street.³

During its operation, the facility contained a warehouse, production buildings, a laboratory, maintenance shops and several tanks. The main building, a 160 x 454 wooden mill, was constructed in 1925. As of 1947, there were three activities ongoing at the IMC facility: a) a sulfuric acid production process; b) a superphosphate (acidulation) production process; and c) a fertilizer mixing process.⁴ Wastes generated by these processes were managed and disposed of in three wastewater ponds located on the southeastern portion of the plant adjacent to Fairforest Creek, in wastewater ponds located behind the former acid plant on the northeastern portion of the site and in on-site landfills.

Sulfuric acid was produced at the plant from 1947 until 1971; the plant had a rated

¹Draft Spartanburg Plant Assessment, p. 35 (1984) [Batestamp #I012940-012945].

²EPA Administrative Order by Consent, Finding of Fact IV.N., p. 4 (July 27, 2001).

³Id. at p. 8 (September 8, 1998).

⁴Arnold & Porter letter to EPA-Region 4: Vigindustries Spartanburg South Carolina Facility (October 15, 1999); IMC-Global letter to EPA-Region 4: Awkright Dump Site (April 7, 2000).

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capacity of 40 tons/day.⁵ According to two letters from IMC Global and its attorney of record, Arnold & Porter, IMC's sulfuric acid production process utilized a burner to oxidize elemental sulfur. IMC then added water to four, lead-lined, reaction chambers containing the oxidized sulfur. An aqueous, sulfuric acid solution condensed in the reaction chambers and was collected in above-ground, storage tanks for subsequent use in the superphosphate manufacturing process. The acid plant, which was located behind the main warehouse and production building, was dismantled in 1970. According to IMC Global, all materials generated during the dismantling of the acid plant were recycled or sold as scrap.⁶ A recent Aerial Photographic Analysis performed by the EPA identified four, surface impoundments located on the northeastern portion of the site that appear to have been associated with the sulfuric acid production process. These impoundments are known to have been active from the late 1950s until 1970.⁷

The superphosphate production process was expanded in 1952 by the installation of a 40 ton sturdivant den in which phosphate rock was mixed with sulfuric acid. Phosphate rock, a natural resource that is widely distributed throughout the world, normally contains varying amounts of heavy metals, including arsenic, chromium, cadmium, mercury, selenium, uranium and vanadium.⁸ In order to produce its superphosphate product, IMC mixed ground phosphate rock with concentrated sulfuric acid to produce a slurry which was then allowed to harden in a denning box. Once cooled and hardened, the mixture was cut and moved via an elevator and conveyor system to a storage area within the main warehouse. Vapors from this mixing process were directed through a three-stage, venturi, jet water scrubber to capture the HFS and to remove the particulate matter; the scrubber water and associated sludge were discharged to the ponds located on the southeastern portion of the site. The HFS was stored in an on-site tank prior to sale to municipalities for water fluoridation purposes.⁹

The fertilizer mixing process was modified during the mid-1960s when a granulator, dryer and cooler were added. The granulation unit, constructed in 1965, had a production

⁵Deposition of Glenn A. Feagin, p. 54, line 5 (January 14, 2002).

⁶Arnold & Porter letter to EPA-Region 4: Vigindustries Spartanburg South Carolina Facility (October 15, 1999).

⁷EPA Expanded Site Inspection Report (Revision 1), p. 9 (November 16, 2000); IMC Global letter to EPA-Region 4: Awkright Dump (April 7, 2000); Arnold & Porter letter to EPA-Region 4: Vigindustries Spartanburg facility (October 15, 1999).

⁸Potash & Phosphate Institute "White Paper" Publication, *Heavy Metals in Soils and Phosphate Fertilizers*, p. 1 (April, 1998).

⁹Draft Spartanburg Plant Assessment, p. 36 (1984).

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capacity of 30 tons/hour¹⁰ and blended raw materials like superphosphate, potash, ammonium sulfate and other solid, additives into fertilizer product. Two of these solid "additives" included a "zinc oxide" compound generated by secondary steel mills located in Georgia and a substance referred to as "MEM" or "minor element mix". The source of the "zinc oxide" is identifiable from records produced by IMC as well as from records maintained by the EPA and SCDHEC; however, it has not been possible to identify what "MEM" is or where it came from although internal IMC memoranda confirm that it contained elevated and potentially hazardous levels of lead.¹¹

The "zinc oxide" was, in fact, a heavy-metal, contaminated sludge generated by emission control equipment located at two steel mills owned and operated by Atlantic Steel Company, hereinafter referred to as "Atlantic Steel". Rather than pay to dispose of the large volumes of the hazardous waste it was generating at its Atlanta and Cartersville, Georgia plants, Atlantic Steel Company transferred this listed, hazardous waste to Tri Chem Company, which was owned in part by Atlantic Steel and was located immediately adjacent to Atlantic Steel Company's Atlanta, Georgia plant. Tri Chem Company, hereinafter referred to as "Tri Chem", then bagged the dust for transfer to several IMC facilities located in Georgia, South Carolina and North Carolina where it was added to fertilizer as a zinc micronutrient. We know based on analytical results obtained by IMC, Tri-Chem and Atlantic Steel that this listed, hazardous waste contained hazardous levels of lead and cadmium, an issue that will be addressed in more detail below. In addition, the K061 waste generated by Atlantic Steel and bagged by Tri Chem for transport to IMC for placement into its fertilizer product may have also contained other hazardous contaminants, including chlorinated dioxins.¹²

Liquid additives including ammonia, nitrogen solutions, sulfuric and phosphoric acid

¹⁰Deposition of Glenn A. Feagin, p. 74, lines 23-24.

¹¹IMC Internal Memorandum: Industrial Hygiene Tests (December 22, 1980); IMC Internal Memorandum: Industrial Hygiene Test (January 13, 1981); IMC Internal Memorandum: Dust Sampling (January 22, 1981); IMC Internal Memorandum: Dust Sampling (March 14, 1981); IMC Internal Memorandum: Industrial Hygiene Reports (April 6, 1982); IMC Internal Memorandum: Employee Dust Exposure Testing (November 16, 1983); IMC Internal Memorandum: Industrial Hygiene Reports (March 2, 1984); IMC Internal Memorandum: Results of Personal Exposure Monitoring (November 14, 1984); IMC Internal Memorandum: Industrial Hygiene Samples (November 12, 1985).

¹²Washington State Department of Ecology, *Final Report: Screening Survey for Metals and Dioxins in Fertilizer Products and Soils in Washington State*, p. xv (Executive Summary), Chapter 1 (April, 1999); EPA Proposed Rule: Requirements for Zinc Fertilizers made from Recycled Hazardous Secondary Materials, 65 Fed. Reg. 70953, 70958 (November 28, 2000).

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were also added to the superphosphate blends through the use of a rotary ammoniator which agglomerated the material into granular form. From the ammoniator, the fertilizers were dried in a natural gas-fired, rotary dryer and then cooled, sized and stored in designated areas within the warehouse. The facility also operated two bagging lines. Scrubbers and dust collectors were used to reduce particulate emissions from the dryer and cooler; the scrubber water was disposed of in the wastewater ponds located on the southeastern portion of the site. Both the superphosphate process and the granulation process were shut down when the facility closed in January, 1987.

This type of agricultural, chemical plant generates certain by-products or "industrial, solid wastes" as a result of its manufacturing processes including, but not limited to, the following: 1) plant trash; 2) sanitary wastewater, which was routed via sewer to the City of Spartanburg commencing in or around 1975; 3) process wastewater, boiler blowdown, scrubber water, plant spillage and surface water runoff; 4) spent sulfuric and phosphoric acid; 5) tank bottoms from the acid tanks; 6) used oil; 7) spent solvents; 8) laboratory wastes; 9) air emission control dust/sludge; 10) floor sweepings; 11) unuseable fertilizer product; and 12) contaminated soil and debris. With the exception of the sanitary wastewater, all process wastewater, scrubber water, surface water drainage and storm water runoff was discharged into the wastewater ponds located on the southeastern portion of the site. There are no records at either EPA or SCDHEC documenting how the spent sulfuric acid, spent phosphoric acid, the tank bottoms from the acid tanks, spent solvents, used oil, laboratory wastes and contaminated soil/debris were handled before June, 1986, when facility closure commenced, but IMC's failure to report on the ultimate disposition of these wastes on EPA and SCDHEC forms and its failure to produce any hazardous waste manifests or other documentation relating to their off-site shipment and/or disposal suggests that they were disposed of, either directly or indirectly, into the same, on-site, wastewater ponds. One fact is clear, however. Internal IMC memoranda prepared in 1986 during the plant's closure document that the contents of the acid tanks, low pH wastewater, unuseable fertilizer product and other potentially hazardous, plant wastes were dumped into the wastewater ponds during plant closure activities, a fact that was never disclosed to the SCDHEC.

Not only did plant manufacturing activities result in the generation of solid and liquid waste by-products, both the superphosphate process and the granulation process resulted in emissions subject to federal and state air quality control regulations. In the mid-1970s, after a series of odor and dust complaints from the citizens living in close proximity to the site,¹³ IMC

¹³Handwritten investigation summary of Mitchell, Sims dust complaints (May 8, 1972); Spartanburg County Pollution Control Authority (SCPCA) Industrial Complaint Form: acrid odors (November 9, 1972); SCPCA Industrial Complaint Form: emissions of acrid odor (December 4, 1972); SCPCA Industrial Complaint Form: emissions of white, fog-like acid (June 20, 1973); SCPCA Form: white smoke (December 13, 1973); SCDHEC Complaint Record: ammonia odor, dust (June 9, 1975); SCDHEC Complaint Record: acrid, chemical odor (August 12, 1976); and SCDHEC

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applied for and obtained permits from the SCDHEC to operate emissions control equipment to minimize emissions from the plant. Although the number of complaints alleging odor and dust problems decreased after this equipment was brought online in the mid-1970s, there continued to be sporadic complaints filed by the community with SCDHEC through January, 1987 when the plant closed down.¹⁴ In particular, two neighbors complained to IMC that its emissions were damaging the paint on their vehicles; in one case, IMC paid to have an automobile repainted.¹⁵ Concerns relating to hazardous air emissions, including wind-borne dust, are also validated by IMC's own internal dust and blood monitoring programs which confirmed that plant employees were routinely exposed to excessive levels of dust (particulate emissions) and lead between 1977 and 1986.¹⁶ The source of this lead was the K061 waste.¹⁷

B. IMC's Closure and Post-Closure Monitoring of the Spartanburg Facility (1986-1997)

At some point in early 1986, a decision was made to close the plant down. IMC notified the SCDHEC that it would be closing the plant and its hazardous waste (K061) storage area pursuant to its hazardous waste closure plan. Closure activities commenced in or around June, 1986 and were largely completed by December, 1986. The closure of the K061 storage area was certified by a professional engineer, Dr. Sid Davis, despite the fact that Dr. Davis was not

Inspection/Investigation Form: heavy, ammonia odors (August 13, 1976).

¹⁴SCDHEC Complaint/Investigation Report: strong, chemical odors at night (August 18, 1978); SCDHEC Memo: Complaint #082 (sulfur odors) (August 24, 1978); SCDHEC Complaint/Investigation Report: strong, acid odor (April 16, 1980); SCDHEC Complaint/Investigation Report: dust (May 13, 1980); SCDHEC Complaint/Investigation Report: odor (March 11, 1981); SCDHEC Complaint/Investigation Form: ammonia odor (November 7, 1983); IMC Neighborhood Complaint Form: ammonia smell (April 11, 1985); SCDHEC Inspection/Investigation Form: ammonia odor (April 11, 1985); SCDHEC Complaint/Investigation Form: chemical odor (July 18, 1986).

¹⁵Draft Spartanburg Assessment, p. 39; IMC Internal Memorandum: Need to paint Sims 1980 automobile (April 24, 1985); Deposition of Glenn A. Feagin, p. 98, lines 18-23.

¹⁶IMC Internal Memorandum: Industrial Hygiene Sampling (December 21, 1977); IMC Internal Memorandum: Dust measurements at Spartanburg plant (July 10, 1979); IMC Internal Memorandum: Industrial Hygiene Tests (December 22, 1980); IMC Internal Memorandum: Industrial Hygiene Test; Overexposures to Lead (January 13, 1981); IMC Internal Memorandum: Dust Sampling (January 22, 1981); IMC Internal Memorandum: Dust Sampling (March 14, 1981); IMC Internal Memorandum: Noise and Dust Measurements (April 6, 1982); IMC Internal Memorandum: Industrial Hygiene Measurements (March 1, 1984); IMC Internal Memorandum: Industrial Hygiene Sampling (November 12, 1985).

¹⁷Deposition of Glenn A. Feagin, p. 111, lines 3-13.

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registered as a professional engineer in the State of South Carolina, and the closure certification, which represented that the K061 had been removed from the site for off-site recycling at the IMC-Hartsville facility and the facility decontaminated in accordance with the conditions set forth in its approved closure plan, was submitted to SCDHEC by letter dated January 12, 1987. Dr. Davis received a temporary permit from the South Carolina State Board of Registration for Professional Engineers after the closure certification had already been submitted to SCDHEC.¹⁸ Based on the representations made in the closure certification report submitted by Dr. Davis through Versar, Inc., SCDHEC approved the final closure certification for the K061 storage area on March 11, 1987.

IMC addressed the closure of its wastewater ponds on the southeastern portion of the plant through the SCDHEC's Bureau of Water rather than its Land and Waste Management Branch notwithstanding the fact that the ponds had been used to low pH wastewater and a number of industrial, solid wastes generated at the plant throughout its operation and closure. IMC initially notified the SCDHEC that it would be closing the plant and therefore would not be renewing its NPDES wastewater discharge permit by letter dated August 14, 1986. Correspondence between IMC and the SCDHEC's Bureau of Water regarding the closure of these ponds ensued and groundwater monitoring wells were installed at SCDHEC's insistence to monitor the presence of nitrogen compounds. The ponds were backfilled by the end of December, 1986 and IMC reported to SCDHEC that it would no longer be submitting discharge monitoring reports by letters dated January 16, 1987 and January 26, 1987.

After the plant was closed, its assets were transferred from International Minerals & Chemical Corporation to a wholly-owned subsidiary, IMC Fertilizer Group, Inc. IMC Fertilizer Group, Inc. became a free-standing company on July 1, 1987.¹⁹ In 1987 the site was sold to William McDaniel²⁰ and at some point prior to October, 1990, the property was acquired by CT&C, a South Carolina partnership.²¹ IMC retained the right of access to the site so that it could continue to monitor the groundwater wells installed around the wastewater ponds located on the southeastern portion of the plant, as required by the SCDHEC's Bureau of Water. Glenn Feagin, the Spartanburg's plant's former environmental manager, continued to monitor these groundwater wells for a very limited number of compounds until 1991.

¹⁸South Carolina State Board of Registration for Professional Engineers, temporary permit (February 6, 1987).

¹⁹IMC Global, Inc. letter to EPA-Region 4: IMC Site (March 6, 1999).

²⁰EPA Administrative Order by Consent, Finding of Fact IV.E., p. 3 (July 27, 2001).

²¹SCDHEC letter to Chris Grant (CT&C): Notice of Deficiency (October 31, 1990).

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In 1991, at the impetus of the SCDHEC's Industrial Wastewater Division, IMC retained consultants to start looking at the environmental conditions around these wastewater ponds. Its consultants, RMT, Inc., prepared a preliminary site assessment plan, implemented a modified version of this plan in September, 1991 and drafted a preliminary site assessment report summarizing their findings and conclusions in March, 1992. Based on limited sampling of the on-site groundwater monitoring wells, the site assessment report²² found that fluoride and lead were detected in groundwater samples at levels exceeding maximum concentration limits ("MCLs") and recommended additional investigation to further assess the extent of the contamination present at the site. A final version of this report was forwarded to SCDHEC and a meeting was scheduled with SCDHEC to discuss the results. During this meeting, IMC Fertilizer agreed to proceed with a voluntary environmental assessment to address the contamination remaining at the site.²³

Since its offer to perform a voluntary assessment at the site in 1993, several consultants have been employed by IMC subsidiaries to investigate the extent of the contamination present at the site. IMC Fertilizer, Inc., established in July, 1987, changed its name to IMC Global, Inc. in October, 1994.²⁴ Another IMC subsidiary, IMC Agribusiness, was involved in correspondence with SCDHEC and the EPA in 1997 and 1998 and at some point in 1999, yet another IMC subsidiary was created to manage the IMC-Spartanburg property that had been reacquired from CT&C, Vigindustries, Inc. A series of reports have been filed with the SCDHEC and EPA by IMC subsidiaries and their consultants to document the conditions at the site.²⁵ These reports all verify the presence of heavy metal contamination in and around the former wastewater ponds with the main, inorganic constituents of concern being arsenic, chromium, cadmium, lead and mercury.

²²RMT, Inc. Draft Preliminary Site Assessment Report, p. 3 (March 4, 1992); EPA Expanded Site Inspection Report, p. 6 (November 16, 2000).

²³SCDHEC Memorandum: IMC Fertilizer Meeting (June 1, 1993).

²⁴IMC Global, Inc. letter to EPA-Region 4: IMC Site (March 6, 1999).

²⁵RMT, Inc. Conceptual Plan (March 26, 1992); RMT, Inc. Workplan for Site Investigation at IMC Facility (August 5, 1993); RMT, Inc. Hydrogeological Assessment Report (December 1, 1993); RMT, Inc. Hydrogeological Assessment Report (August 1, 1994); RMT, Inc. Hydrogeological Assessment Report (February 17, 1995); RMT, Inc. Results of Groundwater Sampling and Analysis (September 12, 1995); RMT, Inc. Results of Groundwater Analysis; Remedial Alternative Analysis (April 2, 1996); Atlanta Testing & Engineering Project Plan for the Former IMC Fertilizer Site (April 1, 1997); Atlanta Testing & Engineering Mixing Zone Waiver Application (March 20, 1998); Atlanta Testing & Engineering Annual Groundwater Quality Monitoring Report (May 12, 1998); Kestrel Management Services L.L.P. Final Site Inspection Report Summary (March 22, 1999).

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C. Recent EPA Environmental Investigation Activities: Results (1997-2001)

As is discussed in greater detail below, the EPA-Region 4 office in Atlanta became involved with the environmental investigations being carried out at the former IMC fertilizer plant in 1997 at the insistence of complainants who resided in the community adjoining the IMC plant. The EPA has performed its own investigation of this facility and has concluded that the site's surface soil, subsurface soils and groundwater have been contaminated by the following inorganic and organic, hazardous waste constituents: arsenic, cadmium, cobalt, copper, lead, mercury, nickel, selenium, silver, thallium, vanadium, zinc, cyanide, 2,4-dinitrotoluene, phenanthrene, fluoranthrene, pyrene, benzo (a) anthracene, chrysene, benzo(b/k)fluoranthrene, beta-hexachlorocyclohexane (BHC), aldrin, heptachlor epoxide, dieldrin, 4,4-dichlorodiphenyl dichloroethylene (DDE), endosulfan sulfate, 4,4-dichlorodiphenyl trichloroethane (DDT), alpha-chlordane, gamma-chlordane, Arochlor-1254 (PCB), Arochlor-1260 (PCB), several chlorinated dioxins and furans as well as several radiochemical analytes. At the present time, IMC is in the process of developing remedial cleanup options to address the environmental contamination at and around its former fertilizer plant pursuant to a formal EPA Administrative Order by Consent issued on July 27, 2001, which is attached to this report as Exhibit "C".

III.

**Regulatory Classification of the K061 "Zinc Oxide" Waste
acquired from Tri Chem Corporation for use as a Micronutrient in Fertilizer**

IMC began adding a hazardous, air emission control dust generated by two steel plants located in Georgia to its fertilizer products for its zinc content in 1980 or 1981. This "zinc oxide" additive was acquired from Tri Chem Corporation for use at several of IMC's fertilizer manufacturing facilities including facilities located in Spartanburg and Hartsville, South Carolina. There is no dispute that this material was properly characterized as a hazardous waste from the time of its initial receipt. IMC submitted hazardous waste permit applications to SCDHEC and EPA in November, 1980 to authorize its receipt of this listed, hazardous waste and complied, at least in part, with those interim status, hazardous waste regulations that applied to its storage.

Moreover, when IMC decided to close the plant down, it represented to both EPA and SCDHEC that it would be closing the storage area for the zinc oxide in accordance with a RCRA hazardous waste standards and, in particular, in accordance with its RCRA closure plan. Unfortunately, and as addressed in more detail below, IMC failed to completely remove all of the K061 waste on-site at the time of the plant's closure. IMC also failed to decontaminate all of the equipment, buildings, unuseable fertilizer product and environmental media contaminated by this waste material. An SCDHEC inspection performed in March, 1996 documented the presence of

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K061 in the main warehouse. During an EPA site visit in 1997, the EPA inspectors also observed large amounts of a material they believed to be K061 waste at the site. Approximately 80% of the main warehouse building was illegally demolished by CT&C in June, 1998; however, residual K061 was still found to be present in and around the remains of this building in 1999 when an IMC consultant, Kestrel Management Services, had it sampled and then removed as a regulated hazardous waste to a permitted, RCRA landfill as part of the site's deconstruction and demolition activities.

Counsel for plaintiffs requested detailed information during the discovery process regarding the acquisition, transfer, use and proper regulatory determination of this "zinc oxide" material. Only one, one-page document was produced to Plaintiffs that specified where this hazardous waste originated in more than sixty (60) boxes of documents: an EPA Facility Annual Hazardous Waste Report dated February 8, 1983, attached hereto as Exhibit "D". It is not clear whether the "zinc oxide" used at the IMC-Spartanburg facility was actually purchased or instead received at no cost from Tri Chem Corporation and/or Atlantic Steel since IMC failed to produce even one letter, contract, agreement, invoice or other piece of correspondence between IMC, Tri Chem Corporation and/or Atlantic Steel Company regarding its transfer to IMC-Spartanburg. Moreover, no internal IMC memorandum, accounts payable/receivable records, invoices, bills of lading, hazardous waste manifests or other documentation of any kind was produced by IMC relating to the transfer of this regulated, hazardous waste to the IMC-Spartanburg facility notwithstanding the fact that it was the receipt of this material that rendered this facility subject to the federal and state hazardous waste program between November, 1980 and January, 1987 when the plant closed.

The federal, hazardous waste program enacted pursuant to the Resource Conservation and Recovery Act of 1976, hereinafter referred to as "RCRA", is a complex and technically demanding regulatory program that requires detailed recordkeeping and reporting. It is difficult to believe that IMC would fail to maintain documentation relating to the use of a material that rendered it subject to these federal and state regulatory requirements when it retained records relating to every other conceivable aspect of the plant's operations. For example, IMC was able to produce tax forms and personnel records dating back to the early 1960s, original invoices and receipts for the sale of its fertilizer product dating back to the late 1960s, cancelled checks as well as payroll records, raw material ledgers and "journals" also dating back to the 1960s. A list of the types of records produced by IMC in response to discovery is attached as Exhibit "E". The retention of this wide variety of plant records for the Spartanburg facility dating back to the early 1960s suggests that IMC had no document retention policy in effect during its operation, making the absence of any documentation on the receipt of the "zinc oxide" that much more surprising.

Because IMC failed to produce any information whatsoever on its relationship with Atlantic Steel Company and only a handful of documents relating to Tri Chem Company, the

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author obtained records from SCDHEC, EPA-Region 4 and the Georgia Environmental Protection Division of its Department of Natural Resources, hereinafter referred to as the "GEPD", relating to both Atlantic Steel Company and Tri Chem Corporation in order to obtain a better understanding of how this waste was generated and managed prior to its transport to IMC facilities located throughout the southeastern United States. Those records relating to these companies that were relied on in forming opinions about the transfer and re-use of this listed, hazardous air emission control dust are listed in Exhibit "A" to this report. A review of these agency records documents a trail of contamination associated with the mismanagement of this zinc oxide waste that starts at the generating facilities located in Atlanta and Cartersville, Georgia, extends to the small transfer/transportation facility operated by Tri Chem Corporation, also located in Atlanta on property owned by Atlantic Steel Company, and moves on to the IMC sites located in Spartanburg and Hartsville, South Carolina. Heavy metals contamination of soil, subsurface soils and groundwater has been documented to exist at each of these facilities as a result of the handling of this K061 waste.

As indicated on the EPA Facility Annual Hazardous Waste Report submitted by IMC-Spartanburg on or about February 8, 1983, the Spartanburg facility was receiving zinc oxide from emission control dust generated by Atlanta (sic) Steel, EPA ID#GAD003326477 ; the material was purchased, however, from Tri Chem. It should be noted that IMC not only misidentified the generator as "Atlanta Steel" rather than Atlantic Steel and failed to provide an EPA identification number for the Cartersville plant, it also used an incorrect hazardous waste code in describing this hazardous waste. The hazardous waste code "D008" is meant to represent a waste that is characteristically hazardous for its lead concentration. The emission control dust generated by Atlantic Steel was listed by the EPA not only for its lead content but also for its cadmium and chromium content. The proper EPA identification number for this hazardous waste is "K061" and the K061 code is used exclusively by both Atlantic Steel Company and Tri Chem Corporation in their correspondence with the EPA, SCDHEC and GEPD regarding its management. Using an incorrect waste code for this waste materially misrepresented its generation source and its potential hazardous characteristics.

Not only does the "D008" code fail to reflect this material's possible cadmium and chromium hazards, characteristically hazardous wastes are regulated differently from listed, hazardous wastes in that a characteristically hazardous waste is only hazardous as long as it evidences the hazardous characteristic (e.g; hazardous lead concentration) whereas a listed, hazardous waste is regulated as a hazardous waste regardless of specific constituent concentrations. For example, if a characteristically hazardous waste is left outdoors to weather over a period of time and is later sampled and no longer contains hazardous concentrations of lead, the material is no longer considered to be a hazardous waste. However, if a K061 emission control dust is left outside to weather and is sampled at some later point in time, it remains a hazardous waste regardless of the concentrations of lead, cadmium or chromium that may still be

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present in the waste.

Another difference in the way that these two types of hazardous waste are regulated is that any material that is mixed with a listed, hazardous waste (e.g; wastewater, plant trash) itself becomes a listed, hazardous waste. So, for example, floor sweepings that are contaminated with a listed, hazardous waste such as an emission control dust from a steel manufacturing facility are regulated as listed, hazardous waste irrespective of the levels of lead, cadmium and chromium that may be contained therein. If these same floor sweepings were contaminated by a characteristically hazardous waste such as a "D008" lead-contaminated waste, the sweepings would only be considered to be hazardous waste if the mixture also contained hazardous levels of lead. Similarly and with few exceptions, when a listed, hazardous waste is mixed with process wastewater or storm water runoff, the entire mixture becomes a listed, hazardous waste subject to full RCRA regulation. Because the vast majority of wastes generated at the IMC-Spartanburg plant were disposed of, either directly or indirectly, into the wastewater ponds located on the southeastern portion of the site after November, 1980 and it is highly probable that at least some of these wastes (e.g; floor sweepings from the main warehouse, storm water runoff from loading/unloading areas of the plant, unuseable fertilizer product containing the K061 waste and soil/fertilizer contaminated by K061 waste) were routed both during the plant's operations and at closure into the ponds, the ponds themselves became hazardous waste management units subject to full RCRA regulation.

As will be discussed in more detail below, it is my opinion that IMC failed to perform a proper hazardous waste determination on the industrial, solid wastes that it generated at the Spartanburg facility after November 17, 1980, as is required by 40 Code of Federal Regulations ("CFR") §262.11 (relating to Hazardous Waste Determination). Moreover, IMC failed to report the generation of hazardous wastes at its Spartanburg plant on its RCRA Part A permit application, as required by 40 CFR §§270.10(d), 270.13(j) and 270.14(b) (relating to Permit Applications). IMC further failed to inform the SCDHEC and EPA of the proper regulatory status of its wastewater ponds in violation of 40 CFR Parts §§265 and 270 requirements. More importantly, IMC failed to meet those interim status, operational standards applicable to the management of hazardous wastes in surface impoundments, including the requirement to monitor the groundwater around these units for releases of hazardous waste constituents in accordance with RCRA Part 265 standards. Finally, IMC failed to close the wastewater ponds in accordance with RCRA closure, post-closure care and financial assurance standards in violation of 40 CFR Part 265 requirements. These are serious, program violations and IMC's failure to comply with these regulatory requirements has allowed the hazardous constituent contamination present in and around these impoundments to continue migrating into the environment and from thence into the surrounding community since 1987, when it abandoned the site, through to the present. Although IMC has participated in a series of environmental inspections and investigations, to date no action has been taken to remediate the groundwater contamination underlying the site.

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A. The Generator: Atlantic Steel Company's Atlanta and Cartersville, GA plants1. Atlantic Steel Company's Atlanta, Georgia plant

Atlantic Steel Company's Atlanta plant (EPA ID #GAD003326477) began operations at a 138-acre site located near downtown Atlanta, Georgia at 1365 Mecaslin Street, N.W. in 1901. In 1920 the company began to manufacture steel using the open hearth method, a practice that was modified in 1955 by the installation of an electric arc furnace. Air emission control equipment was added in 1964 and the steel mill began generating baghouse (air emission control) dust immediately thereafter. This "flyash dust" was generated at a rate of 4,000 to 5,000 tons per year and could contain hazardous levels of lead, cadmium and chromium.²⁶

Atlantic Steel's Atlanta plant filed its initial Notification of Hazardous Waste Activity with the EPA on August 15, 1980, indicating that it generated hazardous, K061 waste. Its EPA Part A hazardous waste permit application, submitted on November 17, 1980, the effective date of the newly-promulgated federal, hazardous waste regulations, goes on to provide that Atlantic Steel generated 7,000 tons of K061 waste annually (approx. 20 tons/day) and that it was "mixed" with fertilizer. After filing these initial notifications, Atlantic Steel became concerned about how it was going to comply with these expensive, new regulations and it met with the GEPD in December, 1980 to discuss potential disposal solutions. Atlantic Steel followed up on its stated concerns with the EPA in a letter dated January 5, 1981, which stated that the company could not live with and remain competitive with foreign steel manufacturers if it had to dispose of its K061 waste at an approved (permitted) disposal site. The letter went on to suggest that recycling or recovery alternatives appeared to be a possible solution and noted that they were already selling half of the dust to the fertilizer industry for use as a micronutrient. The letter concludes by stating "[W]e cannot remain a healthy industry providing 2,000 jobs for Georgians if we sink large amounts of money into the ground for dust disposal with no hope of return...we are asking your consent to continue our present practices for handling this material while we commit the dollars saved to a more final solution that is better for all concerned."

Not only was the company having problems disposing of its K061 waste, it was having problems managing it on-site prior to off-site shipment for "recycling" and "recovery". A GEPD Action report dated July 15, 1981, prepared subsequent to a solid waste inspection of the Atlanta steel mill, found that the K061 dust was being piled on the ground in an area that had no protection from wind or rainfall runoff in violation of GEPD's hazardous waste regulations. A Notice of Violation letter sent to Atlantic Steel later that year found that the K061 storage area

²⁶EPA Potential Hazardous Waste Site Preliminary Assessment Form (Part 1), Site Summary: Atlantic Steel Company Atlanta, Georgia (January 5, 1985).

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failed to meet any of the applicable hazardous waste storage standards and further than Atlantic Steel had failed to prepare a written, waste analysis plan as required by 40 CFR §265.13.²⁷ Only one set of sample results for the K061 waste was located in GEPD records²⁸ but it contains sample results for a sample of the EMS Atlanta furnace dust as well as a sample of the Cartersville facility dust. These results show that hazardous levels of cadmium and lead were present in each stream with the Atlanta plant generating K061 waste with a cadmium level of 6.38 ppm and a lead level of 79.3 ppm. The regulatory limit for cadmium is 1.0 ppm; lead has a limit of 5 ppm.²⁹ These laboratory results are appended as Exhibit "F".

Atlanta Steel's problems complying with federal and state hazardous waste management regulations in the storage of their K061 waste continued. A Consent Order was issued by the GEPD in 1984³⁰ which fined them \$5,000.00 and required them to start monitoring the groundwater at the facility for lead, cadmium and chromium. This is where the trail of contamination associated with this K061 waste starts - at the generating plant in Atlanta. The Order also required Atlantic Steel to close out the facility in accordance with RCRA closure and post-closure care standards. Atlantic Steel's first annual groundwater monitoring report for the K061 storage area documented that lead and chromium levels in the groundwater underlying the facility violated interim primary drinking water standards.³¹ According to a site summary of the Atlanta plant appended to an EPA Potential Hazardous Waste Site Preliminary Assessment (Part 1 - Site Information and Assessment) dated January 5, 1985, its storage of this K061 waste "is now suspect in the elevated levels of metals in groundwater present at the site...two routes of contamination are groundwater from past storage of K061 waste and, in the past, air from fugitive emissions of baghouse dust."

Atlantic Steel proceeded to close out its K061 storage area by removing all of the remaining dust but, due to the presence of confirmed groundwater contamination, it had to apply for and obtain a RCRA post-closure care permit to address the groundwater contamination

²⁷Georgia Department of Natural Resources letter to Atlantic Steel Company: Notice of Violation (December 21, 1981).

²⁸MacMillan Research, Ltd., Laboratory Study on Furnace Dust, Analysis Nos. 21-23-4 G and 22-23-4 G (April 29, 1985).

²⁹40 CFR §261.24 (1987).

³⁰Georgia Department of Natural Resources, Consent Order No. EPD-HW-89 (March 8, 1984).

³¹Atlantic Steel Company, 1st annual groundwater monitoring report (October 1, 1984).

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underlying its plant site. A post-closure care permit was issued on June 29, 1987.³² The facility submitted notification of final closure to the GEPD on October 22, 1990.

2. Atlantic Steel Company's Cartersville, Georgia Plant

Atlantic Steel also filed an EPA Part A hazardous waste permit application to address the K061 waste being generated at its relatively new Cartersville, Georgia plant.³³ The Cartersville plant was constructed in 1976³⁴ and manufactured carbon steel from scrap metal. Also equipped with scrubber and baghouse pollution control equipment, the Cartersville plant generated approximately 3,000 tons of K061 waste a year which it starting shipping to Tri Chem in 1978.³⁵ According to an Atlantic Steel - Cartersville plant letter dated June 25, 1982 drafted in response to a GEPD request for information, their K061 waste was either shipped to Tri Chem Corporation or shipped directly to IMC facilities.

The K061 waste generated at the Cartersville plant appears to have had even higher levels of cadmium and lead than that generated at the Atlanta plant. Laboratory results were obtained for the Cartersville sample in 1985 as well; sample analysis revealed a cadmium level of 12.8 ppm and a lead level of 122 ppm. Again, the regulatory triggers for characteristically hazardous waste is 1.0 ppm for cadmium and 5.0 ppm for lead. The trail of contamination created by the mismanagement of this listed, hazardous waste also leads back to Cartersville, Georgia. An EPA Potential Hazardous Waste Site Preliminary Assessment (Part 1) form was completed for the Cartersville plant in 1985 and it also notes that potential heavy metals-contamination of the groundwater from an on-site landfill and of the soil by baghouse dust is present at the site.³⁶

B. The Middle Man: Tri Chem Corporation

Tri Chem Corporation a/k/a Tri Chem Company (EPA Identification #GAD082830803) is located at 1269 Mecaslin Street, N.W. in Atlanta, Georgia on land owned by Atlantic Steel

³²GEPD Hazardous Waste Permit #HW-044(D) (June 29, 1987).

³³EPA Part A Hazardous Waste Permit Application: Atlantic Steel - Cartersville plant (November 17, 1980).

³⁴GEPD Waste Management Data Sheet: Atlantic Steel - Cartersville plant (March 2, 1984).

³⁵*Id.*

³⁶EPA Potential Hazardous Waste Site Preliminary Assessment (Part 1): Atlantic Steel - Cartersville, Georgia plant (November 19, 1984).

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Company, a member of the IVACO Group which is a Canadian consortium of basic industries.³⁷ According to a 1995 GEPD facility assessment, Tri Chem company is 51% owned by Atlantic Steel Company. It commenced operation in 1977 and produced fertilizer micronutrients and other metals-bearing compounds, primarily by recycling K061 waste from its sole source, Atlantic Steel Company. Tri Chem filed an initial Notification of Hazardous Waste Activity with the EPA on August 18, 1980 on which it stated that it was managing K061 listed, hazardous waste. The EPA acknowledged receipt of this initial notification on October 24, 1980; Tri Chem followed up by submitting an EPA Part A hazardous waste permit application on November 19, 1980 and included a SIC Code of 2819 (Fertilizer material and zinc oxide) for its business. Section XII (relating to Nature of Business) of the application specifically states that the facility is engaged in the "recycle of electric steel furnace dust into micronutrient addition for zinc for agricultural fertilizers; both in a dust and as a pelletized material. The finished product is sold bagged (and in bulk) to chemical fertilizer manufacturers." The estimated, annual quantity of K061 waste received was stated to be 6,000 tons per year. The EPA called in their Part B hazardous waste permit application on April 14, 1983.

Although the plant commenced operation in 1977, it was slow to perfect its bulk bagging and pelletizing activities. An April 27, 1983 GEPD Trip Report prepared after a site inspection states as follows:

Tri-Chem, although they have been in business for several years is still basically a pilot operation. They are a small company and are only now beginning to obtain the equipment they need to actively get into production. The present operation is very dirty. They have two baghouses on order and when they are installed the fugitive dust problem will be greatly reduced. Tri-Chem attempts to keep the operation clean, but because of the poor equipment they have it is difficult...Tri-Chem was deficient in all of the paperwork requirements with the exception of the manifest requirements."

During this inspection, Tri-Chem's President, Max Munoz, asked whether there was any way he could avoid shipping the recycled K061 waste as a hazardous waste. The correspondence between Tri Chem, the GEPD and the SCDHEC that followed clearly resolved the status of that portion of the K061 dust that was simply bagged and/or sold in bulk from SCDHEC's perspective — it was hazardous waste. Although GEPD determined that the recycling activities being performed by Tri Chem, once performed on the K061 waste received from Atlantic Steel, rendered the "product" exempt from regulation by letter dated June 29, 1983, GEPD moved

³⁷GEPD RCRA Facility Assessment: Tri Chem Company, Atlanta, pgs. 1, 3 (March 24, 1995).

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forward to process Tri Chem's Part A and Part B hazardous waste permit application to cover its storage activities and issued Hazardous Waste Permit No. HW-019(S) on June 18, 1985.

When asked by IMC whether or not the bagged, zinc oxide flue dust sold by Tri Chem Company was recycled and therefore no longer subject to regulation, SCDHEC responded by stating, "I have some concern that the simple repackaging and sale of a hazardous waste is sufficient grounds to state the waste has been recycled and is no longer subject to regulation. I suggest that you contact the Residuals Management Branch, EPA-Region 4 in Atlanta and obtain verification that the flue dust would no longer be regulated after bagging by the Environmental Protection Agency." It is not clear whether IMC, Tri Chem or Atlantic Steel ever approached the EPA's Residuals Branch for a determination on this issue although there is no evidence that they did so in the EPA's records on this facility.

In response to an SCDHEC notice of violation and perhaps anticipating SCDHEC's response to questions regarding the regulatory classification of the zinc oxide dust, IMC submitted an authorization request form³⁸ to SCDHEC to authorize its continued receipt of the zinc oxide dust in June, 1983. The information furnished on this form relating to the lead concentrations present in this waste indicates that it contains 147 ppm lead although a typewriter notation at the bottom of the form goes on to state that the zinc oxide was re-tested on February 23, 1983 and the levels of lead during the re-testing were only 0.18 ppm. This re-test lead concentration is difficult to support for the following reasons: 1) the analytical results of this "re-testing" are not appended to this form; and 2) every other laboratory analysis of this waste stream with the exception of Kestrel's 1999 sample has had lead levels in excess of 5 ppm., the regulatory trigger for hazardous waste.

More disturbing is the misleading information provided on the cadmium content of this material. In the main body of the form, the cadmium content is specified as being less than 0.1 ppm; the re-testing performed on February 23, 1983 purportedly had a cadmium concentration of less than 0.1 ppm as well. In contrast, every single laboratory analysis contained in the records maintained by SCDHEC, GEPD and EPA-Region 4 for Atlantic Steel Company, Tri Chem Corporation and IMC as well as the laboratory results produced by IMC for K061¹waste received at the Spartanburg, South Carolina facility show cadmium levels well in excess of the regulatory trigger of 1 ppm. These laboratory results are all appended as Exhibit "G". IMC, Tri Chem and Atlantic Steel have all remained silent regarding the toxic levels of cadmium contained in the K061 wastes generated by these two secondary smelters; similarly, it does not appear that any of these parties have ever tested the K061 waste generated by the Atlanta and Cartersville plants for the presence of chlorinated dioxins.

³⁸IMC letter to SCDHEC: authorization request for Spartanburg, SC (June 30, 1983).

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Although the SCDHEC approved IMC's authorization request, there is no evidence that the SCDHEC changed its mind about the regulatory status of this hazardous waste as it continued to require IMC to comply with RCRA interim status and closure standards through facility closure in 1987. IMC apparently gave up on obtaining an exemption from RCRA regulation as well, as evidenced by an internal IMC memo dated October 1, 1985 which states that "[I]n a nutshell, the hazardous sludge K061, emission dust from electric steel smelting furnace which we use as a source of zinc is fully regulated under RCRA. Permits and everything we are doing is required."

As noted above, the trail of contamination associated with this K061 waste, beginning at the secondary smelters operated by Atlantic Steel Company, extended to the small, Tri Chem facility. A RCRA Facility Assessment Report completed by the GEPD in 1995 documented that the plant building was covered from floor to ceiling with brown-black product dust, which was impossible to distinguish from unprocessed, K061 waste. The releases from the production and storage processes were not only pervasive, the GEPD concluded that they were "routine, systematic and deliberate".³⁹ The assessment report further concluded that there was soil contamination present and that additional site investigation activities were appropriate. Tri Chem shut down its operations in 1999.⁴⁰

C. IMC's Compliance with RCRA Generator, Storage and Disposal Standards

IMC's Spartanburg facility filed an EPA Part A hazardous waste permit application with EPA-Region 4 and SCDHEC on November 17, 1980, attached hereto as Exhibit "H" in which it discussed its superphosphate (SIC code 2874) and fertilizer mixing (SIC Code 2875) activities. The form indicates that IMC was accepting K061 emission control dust in 50-pound paper bags for placement into fertilizer through the use of a TVA-type granulation unit. The enclosed warehouse used for its storage prior to these mixing activities had a 300-ton capacity; a second warehouse container area had a capacity of 50 tons. The estimated, annual quantity of K061 waste to be received and managed at the facility is specified as being .450 tons/year. The application notes that the zinc oxide waste was generated as a by-product of the electric furnace process for the recovery of steel values from scrap metal, mainly junked automobiles and discarded, galvanized metal products but fails to identify the generator of this material, Atlantic Steel Company. Section III of the form goes on to state that this waste is toxic for its lead content and contains 2.5 to 3.5% lead expressed in its oxide form. The application completely fails to mention the waste's toxic cadmium content and in August, 1981 was amended to strike

³⁹GEPD RCRA Facility Assessment Report, p. 4 (March 24, 1995).

⁴⁰EPA-Region 4 Memorandum: Shutdown of Tri Chem Facility (September 8, 1999).

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out the "K061" listing and to replace that waste code with the erroneous and misleading "D008" listing described above.

This type of agricultural chemical plant generates certain by-products or "industrial, solid wastes" as that term is defined in 40 CFR Part 260 as a result of its manufacturing processes. These industrial, solid wastes include, but are not limited to, the following: 1) plant trash, which IMC hauled to a sanitary landfill for disposal during the 1970s and 1980s.⁴¹ Plant trash appears to have been disposed of in on-site landfills during the first 50-60 years of operation; 2) sanitary wastewater, which IMC routed via sewer to the City of Spartanburg commencing in or around 1975; 3) process wastewater, boiler blowdown, scrubber water, plant spillage and surface water runoff, which IMC discharged to the on-site ponds located on the southeastern portion of the plant;⁴² 4) spent sulfuric and phosphoric acid; 5) tank bottoms from the acid tanks; 6) used oil; 7) spent solvents; 8) laboratory wastes; 9) air emission control dust/sludge; 10) floor sweepings; 11) unuseable fertilizer product; and 12) contaminated soil and debris. There is documentation present in IMC's own records as well as in SCDHEC and EPA files to show that each of these industrial, solid waste streams was generated at some point during the operation and/or closure of the Spartanburg plant.

A hand-drawn diagram of the plant dated September 4, 1981 provides a rough description of waste handling practices in use at the plant and is appended hereto as Exhibit "T". At this point in time, there were two surface impoundments in use on the southeastern portion of the facility: a settling pond which received waste inflows from throughout the plant including plant spillage; and a storage pond which received wastewater from the scrubbers and cooling tower blowdown, surface water drainage from the raw material loading/unloading area and from the rear of the plant, surface water runoff from the office, road and upper plant area and wastewater from the raw material storage (potash) bin. Sludge from the settling pond was periodically dredged out and placed back into the plant processes for re-use. As discussed above, drainage from those raw material storage areas that managed K061 waste became listed, hazardous waste as a matter of law.⁴³ Moreover, any process wastewater with a pH below 2.0 standard units was a characteristically hazardous waste (corrosivity)⁴⁴ and routing such low pH wastewaters into either pond rendered the pond(s) hazardous for purposes of the RCRA regulatory program. Finally,

⁴¹IMC Global letter to EPA-Region 4: Awkright Dump Site in Spartanburg, South Carolina (April 7, 2000).

⁴²Draft Spartanburg Assessment, p. 37-39.

⁴³40 CFR §261.3(b)(2) (1987).

⁴⁴40 CFR §§261.3(a)(2)(i); 261.22(a)(1).

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placing certain spent solvents, laboratory wastes, tank bottoms and other hazardous wastes either directly or indirectly into these ponds rendered them subject to the federal and state hazardous waste management program.

In my opinion, the two wastewater ponds located on the southeastern portion of the plant site adjacent to Fairforest Creek were in fact used after November 18, 1980 to manage both listed and characteristically hazardous wastes and were therefore subject to the entire federal and state RCRA hazardous waste regulatory program. This opinion is based in part on my conclusion that spillage and surface water drainage contaminated by K061 waste was discharged into these ponds after November 19, 1980, rendering the ponds subject to full hazardous waste regulation. IMC's internal memoranda and an open dump inventory submitted to SCDHEC in 1981 state clearly that the surface water drainage and runoff from raw material storage areas and the warehouse area of the plant was routed into the plant's wastewater ponds.⁴⁵ As noted above, any mixture of K061 waste with floor sweepings and/or storm water runoff is regulated as a listed, hazardous waste as a matter of law. We also know from internal company records that the pH of the company's wastewater was acidic and could at times be less than 2.0 s.u., rendering it a characteristically hazardous waste pursuant to 40 CFR §261.22 for corrosivity.⁴⁶ Moreover, pH sampling results on the sediments contained in these ponds and on contaminated groundwater underlying the ponds also document low pH conditions down to 2.0 s.u., further evidencing the low pH of the wastewater inflow to the ponds.⁴⁷

This opinion is further based on the fact that additional hazardous waste streams may have been placed into these impoundments both before and during the closure of the facility. A thorough review of EPA and SCDHEC files as well as of those documents produced to Plaintiffs' counsel by IMC and its attorneys of record shows that IMC failed to report on the off-site shipment of any hazardous waste from this facility between 1980 and January, 1987 with the sole exception of the shipment of residual K061 waste to its Hartsville facility during facility closure in 1986. None of the industrial, solid wastes generated on-site as the result of these

⁴⁵Handwritten Diagram and Notes: the Spartanburg Facility (September 4, 1981).

⁴⁶IMC Internal Memorandum: Samples taken from Spartanburg Sediment Pond and Sewage Lagoon (July 15, 1971); IMC Pond pH Record (9/28/83-3/30/84); IMC Interoffice Correspondence: Pond Water at Spartanburg (July 23, 1986).

⁴⁷Spartanburg Pond Samples (June 24, 1986); IMC Internal Memorandum: Environmental Concerns and Costs - Spartanburg & Augusta (June 16, 1986); Handwritten Notes: Acidulation Pond Mud (December 1, 1986); Handwritten Feagin Memo: Spartanburg (December 17, 1986); Handwritten Memo: Pond Water Spartanburg (undated; last date referenced in memo is May 19, 1987); Handwritten Memo: Test well results (December 14, 1990).

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production activities, with the exception of plant trash, sanitary wastewater and the shipment of residual K061 to IMC-Hartsville facility referenced above, were disposed of at permitted, off-site facilities between 1980 and January, 1987.⁴⁸ It is my opinion that IMC, in an attempt to save as much money as possible during the closure of this plant, may have decided to dump all of the waste materials generated during closure into their impoundments rather than shipping them off-site at significant expense to a commercial, hazardous waste landfill. Internal memoranda prepared by IMC staff during closure in 1986 support my conclusions.⁴⁹

I therefore conclude that the original, Part A hazardous waste permit application and the amended Part A application submitted in August, 1981 failed to address the generation of hazardous wastes at the facility in violation of 40 CFR §270.10 permit application requirements. I further conclude that IMC failed to properly designate those ponds located on the southeastern portion of the site as hazardous waste surface impoundments in violation of 40 CFR §270.10 permit application requirements.

I also conclude that IMC had a spotty compliance record with SCDHEC's waste management program during its operation. An SCDHEC inspection was performed at the plant on June 9, 1982; several deficiencies were noted by the SCDHEC inspector including a deficient waste analysis plan and closure plan for the K061 storage area. An SCDHEC Notice of Violation was issued on November 12, 1982 which required IMC to develop a waste analysis plan, a personnel training program and a contingency plan within sixty (60) days of receipt of the notice. IMC was also requested to provide analysis of the lead levels in its fertilizer. The SCDHEC did not request information on the related cadmium levels in IMC's fertilizer product, perhaps because IMC was continuing to misrepresent the nature of its zinc oxide additive. Not only did the company's amended Part A application refer to this waste as lead-contaminated, D008 waste; its closure plan and its 1981 Facility Annual Hazardous Waste Report also referred to this material as a D008 waste.

The SCDHEC performed another industrial waste inspection of the facility on June 2, 1983. Although no violations were pursued after the inspection, the SCDHEC noted in a letter dated June 10, 1983 that no authorization request to receive hazardous waste at this facility had been filed with the SCDHEC. The regulations set forth in R.61-79.11 of the SCDHEC rules required facilities such as IMC to apply for and obtain authorization to receive hazardous waste from off-site facilities. As discussed in more detail above, IMC responded by submitting an

⁴⁸Deposition of Glenn A. Feagin, p. 124, lines 17-22.

⁴⁹Handwritten Notes: Environmental Problems (June 9, 1986); Handwritten Notes: Discussion with J.K.H. and G.A.F. (Spartanburg) (June 13, 1986); IMC internal memorandum: Environmental Concerns and Costs - Spartanburg & Augusta (June 16, 1986).

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authorization request form which actively misrepresented the levels of cadmium present in the zinc oxide additive and minimized the concentrations of lead.

IMC continued to misrepresent the accurate nature of its zinc oxide additive in 1984; a revised closure plan prepared in March, 1984 continued to use the "D008" waste code, wrongly characterizing this material as a characteristically hazardous waste rather than as a listed, hazardous waste. Not until 1986, when it had to dispose of the residual K061 waste during the closure of its facility, did IMC begin to use the proper waste code. In an authorization request form submitted to SCDHEC on June 23, 1986, IMC finally disclosed the true composition of its K061 waste by indicating that it contained up to 9.95% cadmium and 3.5% lead. Although these percentages do not provide information on the leachability of the cadmium and lead in this material, it is indicative of the relative proportions of cadmium and lead that were present and is the first time that the SCDHEC was informed that cadmium was a potential constituent of concern. A copy of this Request for Authorization is attached to this report as Exhibit "J".

An amended closure plan was submitted by IMC on July 30, 1986 and, although it uses the proper code for the waste, K061, it continues to misrepresent the chemical composition by stating, "A sample of this material failed the leachate test for lead and was therefore classified as a hazardous waste. Also, E.P.A. has listed this material as K061 due to the large amount produced and the lead content and, therefore, we are handling it under manifest and permits as required by RCRA regulations." The previous closure plan only disclosed that the material had failed the toxicity leachate test for lead. This statement is still misleading. It first suggests that the only reason that IMC was handling this material as a hazardous waste was that it had failed the leachate test for lead. This is incorrect. The zinc oxide was being generated, transported and stored by Atlantic Steel Company and Tri Chem Corporation as a K061, listed hazardous waste. Secondly, it states that the reasons that the EPA listed this waste as hazardous were 1) it was generated in large quantities; and 2) it was characteristically hazardous for its lead content. Both of these reasons are misleading. The volume of waste generated by secondary steel mills was not the basis for this listing; instead, it was the lead, cadmium and chromium content of this waste that led the EPA to take the step of listing it as a hazardous waste and subjecting its management to the "mixture" and "derived from" rules referred to elsewhere in this report.

By minimizing its hazards, the IMC was also minimizing the adverse consequences that could arise if this material was not properly disposed of in a permitted, hazardous waste management facility. These hazards were substantial as is evidenced by the trail of contamination that followed this K061 waste from site to site. As already noted, Atlantic Steel Company's Atlanta and Cartersville plants both had significant soil and groundwater contamination caused by the management of this K061 waste by 1985. The Tri Chem facility, although completely paved and less than 2 acres in size, was also documented to have soil contamination caused by the handling of this K061 waste. As is evident from the environmental investigatory findings

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presented in this report, the Spartanburg site's soils and groundwater have also been contaminated by heavy metals including lead, cadmium and chromium that were contained in this K061 waste.

The federal/state hazardous waste program should have been implemented by IMC in a manner that detected the heavy metal and other hazardous substances in the site's surface and subsurface soils and groundwater at and around the southeastern surface impoundments prior to the facility's closure in January, 1987. If IMC had properly designated these impoundments as hazardous waste impoundments in November, 1980 and had complied with the interim status standards applicable to hazardous waste surface impoundments set forth in 40 CFR Part 265, Subpart F, a groundwater monitoring system would have been installed around these impoundments by no later than 1984 and a rigorous groundwater monitoring and assessment program would have kicked into place at that time. The heavy metals, volatile and semi-volatile organic compounds discovered more than ten (10) years later by EPA would have been detected before the plant closed down and IMC would have been required to perform a groundwater assessment, develop a program to clean up the contamination and obtain a RCRA closure and post-closure care permit to govern the groundwater investigation and cleanup activities. In short, had IMC complied with all applicable hazardous waste requirements, the EPA would never have had to become involved with this site and it would never have been listed on the National Priorities List for federal Superfund eligibility.

Even assuming that IMC failed to recognize the regulated status of these impoundments as hazardous waste management units in the early 1980s, the contamination around the surface impoundments would still have been addressed prior to the facility's closure had IMC complied with another important element of the federal/state hazardous waste program: the corrective action program. In 1984, the RCRA statute was amended by the Hazardous and Solid Waste Amendments of 1984, hereinafter referred to as the "HSWA" amendments. These amendments were designed to improve the federal hazardous waste program by curing certain problems that had become obvious after several years of implementation. One of these perceived deficiencies was that the original statute failed to require operators of hazardous waste management facilities to investigate and remediate old waste management units that were releasing hazardous waste constituents into the environment. The HSWA amendments amended §3004 of RCRA by adding a new subsection "u" relating to continuing releases at permitted facilities, as follows:

Continuing releases at permitted facilities: Standards promulgated under this section shall require, and a permit issued after November 8, 1984 by the Administrator or a State shall require, corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage or disposal facility seeking a permit under this subchapter, regardless of the time at which waste was placed in such unit. Permits issued

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under section 6925 of this title shall contain schedules of compliance for such corrective action (where such corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action.

Interim status hazardous waste management facilities such as the IMC-Spartanburg plant were also to be covered by these new corrective action requirements, as is clear from the foregoing language. If the operator was not willing to commence the investigation of its wastewater impoundments or other solid waste management units (e.g; known spill areas, landfills, waste piles, etc.), corrective action requirements were to be imposed through administrative orders until such time as the agency could issue the Part B permit. Pursuant to §3004(u) of RCRA, the EPA and/or the SCDHEC had the clear authority and obligation to require IMC to investigate all of its former waste management units (e.g; the on-site landfills, the four impoundments located behind the dismantled acid plant on the northeastern portion of the site) as well as those wastewater ponds being used to manage the facility's process wastewater. Why didn't this happen?

The SCDHEC notified IMC's Spartanburg facility of the new HSWA, corrective action requirements by letter dated March 24, 1986, attached hereto as Exhibit "K". IMC completed the questionnaire that was enclosed with this letter and, in its response, stated that although it had a water collection and recycle pond system at the facility, it contained no hazardous waste and had experienced no prior or current releases of hazardous materials. In my opinion, these statements not only misrepresent the true regulatory status of the ponds located on the southeastern portion of the facility but fail to address the issue presented by these new requirements — whether or not the impoundments were in fact releasing hazardous substances into the environment. The corrective action statute does not require that a unit be a hazardous waste management unit in order to fall within its scope, only that the unit be a "solid waste management unit" at a hazardous waste treatment, storage and disposal facility. Clearly, the impoundments located on the southeastern portion of the site qualified as a solid waste management units since they managed process wastewaters, plant spillage and rainfall runoff from the entire facility. It is equally clear that the facility was subject to these requirements since it was being operated as an interim status, hazardous waste treatment, storage and disposal facility by virtue of its receipt and storage of K061 waste until January, 1987.

Because IMC never performed any Appendix VIII sampling in and around the wastewater ponds to determine whether or not hazardous substances were being released, it had no way of evaluating whether or not the ponds had had or were having such releases into the environment. This information, however, was not furnished on the questionnaire submitted to the SCDHEC in response to its March 24, 1986 letter, leaving the impression that IMC had at least evaluated whether its ponds had managed or were managing hazardous waste and had determined based on some evidence that the ponds had never experienced any release of a hazardous material (e.g;

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lead, cadmium, chromium, etc.) For whatever reason, the SCDHEC failed to identify these units as subject to RCRA corrective action although its Bureau of Water knew that there was some nitrogen and sulfates contamination around the ponds and requested that the extent of this contamination be assessed in early 1987.⁵⁰ To date, IMC has never performed any sort of RCRA-based, groundwater quality assessment to determine whether or not the impoundments were releasing hazardous substances such as lead, cadmium, chromium, volatile and semi-volatile organics and/or chlorinated dioxins into the environment pursuant to the RCRA corrective action program in violation of §3004(u) of RCRA, as amended by HSWA in 1984. Instead, the site has been added to the National Priorities List ("NPL") for cleanup under the federal Superfund program and the environmental investigations that led to its listing were paid for at the taxpayer's expense.

Interestingly, the EPA came to a different conclusion with respect to the regulatory status of the recycle ponds located at another IMC site in South Carolina, its Hartsville facility. An examination of the SCDHEC's records relating to the Hartsville site show that this facility was almost identical in design and function to the Spartanburg plant. It also accepted K061 waste generated by Atlantic Steel Company for use as a zinc micronutrient in fertilizer compounds; it also used one or more wastewater ponds to dispose of plant process wastewater, scrubber water, drainage from the plant's raw material storage areas and storm water runoff until 1983. IMC-Hartsville submitted a Part A hazardous waste permit application to authorize the management of K061 wastes on November 17, 1980; its permit application fails to mention the presence of surface impoundments at the site. The closure plans prepared for the K061 storage areas also ignored the presence of the surface impoundments at the Hartsville site. The SCDHEC called in the facility's final Part B application for a hazardous waste permit by letter dated May 5, 1988.

Apparently, the EPA became concerned about the presence and status of the recycle pond(s) at Hartsville during the processing of the Part B application because a RCRA Facility Assessment was performed at the Hartsville facility by NUS Corporation in which a recycle pond was identified as a solid waste management unit subject to RCRA corrective action requirements.⁵¹ SCDHEC, defending the company's position that the recycle pond was not a "regulated" unit, responded to this EPA assessment by arguing that the sediments in the pond were not toxic. This argument was based on one sediment sample collected from the recycle pond in 1980. SCDHEC also argued that the scrubber solids were sent to the pond prior to 1983 and that K061 waste was only used intermittently at the facility so there was no proof that granular, scrubber solids containing (mixed with) K061 waste were routed to the pond.

⁵⁰SCDHEC letter to IMC: Comments on IMC's Pond Closure Proposal (January 9, 1987).

⁵¹EPA-Region 4 letter to SCDHEC: RCRA Facility Assessment performed by NUS Corporation (May 27, 1989).

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The EPA refused to agree and by letter dated August 2, 1989 specifically stated that although an operating permit was not required for the storage of already processed, K061-containing fertilizer additives, the Hartsville facility was still a candidate for a corrective action order to address the release of K061 from the recycle pond. EPA refused to remove IMC-Hartsville from the list of RCRA-regulated, interim status facilities on this basis alone.⁵² Several years later, the EPA issued a RCRA §3008 order to IMC requiring further investigation and corrective action at the IMC-Hartsville recycle pond.⁵³ If the recycle pond at the Hartsville facility was a solid-waste management unit subject to RCRA corrective action requirements, then the Spartanburg ponds were similarly regulated since they received the same K061-contaminated mixtures and corrosive process wastewater as generated at the Hartsville facility. Had IMC recognized the applicability of these corrective action requirements to the ponds at its Spartanburg facility, the contamination surrounding these ponds would have also been discovered at or around the time of the plant's closure and addressed as required under RCRA. Again, the EPA would never have had to become involved at the site.

IV. **Regulatory Issues relating to the Closure of the IMC-Spartanburg Facility in 1986**

A. The Closure of the K061 Storage Areas of the Plant

Pursuant to the authority granted it pursuant to §3004 of RCRA, the EPA promulgated closure and post-closure care standards for interim status, hazardous waste management facilities. These federal standards are located in 40 CFR Part 265, Subpart G and include a broad closure performance standard in §265.111, as follows:

The owner or operator must close the facility in a manner that:

- (a) Minimizes the need for further maintenance; and
- (b) Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to ground or surface waters or to the atmosphere; and
- (c) Complies with the closure requirements of this subpart...

⁵²EPA-Region 4 letter to SCDHEC: K061 dust processed as a fertilizer component (August 2, 1989).

⁵³IMC Agribusiness letter to EPA and SCDHEC: RCRA Order (October 15, 1997).

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The closure requirements included within this subpart include the submission of a closure plan meeting certain minimum, informational requirements and the implementation of the state-approved closure plan. A copy of IMC-Spartanburg's approved closure plan dated July 30, 1986 is attached hereto as Exhibit "L". The approved, IMC-Spartanburg closure plan provided that "*All facility equipment and structures* which have come into contact with hazardous waste will be considered hazardous and will be decontaminated or disposed of when closure is complete. [Emphasis added]" In addition, the closure plan specifically states that the closure performance standard contained in 40 CFR §265.111 would be satisfied, stating that "[T]his closure is designed to ensure that the facility will not require further maintenance and controls after closure, and that threats to human health and the environment will be eliminated. The closure plan is designed to avoid escape of hazardous waste, hazardous waste constituents, leachate and contaminated rainfall to the ground, air or surface waters after closure is complete."

The evidence contained in SCDHEC and EPA site inspection reports prepared in the mid to late 1990s, however, indicate that the provisions of the approved closure plan were not implemented in contravention of the closure certification executed by the engineer charged with overseeing closure at the site, Dr. Sid Davis. The final closure certification report is attached hereto as Exhibit "M". Recent evidence indicates that significant quantities of K061 dust were left on the site in and around the main warehouse building. The SCDHEC performed an inspection of the abandoned site as well as a neighboring chemical plant in early January, 1996 at the request of an adjoining neighbor. The inspector not only prepared a report documenting the presence of large amounts of what appeared to be K061 waste, photographs were taken during the inspection which show piles of this material in the main warehouse building. These inspection results were later confirmed in an internal Memorandum dated August 29, 1997, prepared shortly after a site inspection was performed by the EPA. EPA project manager Ralph O. Howard found that "[t]he place in unsecured and obviously dangerous...in places, 2-3 feet of what appears to be K061 dustlike material...I believe it is probably all K061...The total volume is hard to estimate but it is large."

In June, 1998 the current site owner, CT&C, illegally demolished most of the main warehouse building, but residual K061 waste was still left in place in parts of the remaining structure. IMC took over site demolition activities shortly after CT&C's unauthorized work at the site and its consultants, Kestrel Management Services, L.L.C., sampled residual material which it believed to be K061 waste so that a determination on proper disposal could be reached. The sample failed the TCLP test for both cadmium and selenium with the results showing a concentration of 3.4 mg/l for cadmium. The regulatory limit for cadmium is 1.0 mg/l. Arsenic levels exceeded EPA risk-based concentrations and zinc was also detected in high concentrations

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indicating that the substance analyzed was probably K061 waste.⁵⁴ Kestrel moved to reactivate the facility's former EPA hazardous waste identification number so that the remaining K061 waste, which Kestrel estimated to be less than 100 kg., could be removed and transported to a permitted, hazardous waste landfill. In short, all of the K061 listed, hazardous waste was not removed at the time of closure in stark contrast to statements made in the closure certification report prepared by Dr. Davis.

Not only did IMC fail to meet this closure performance standard for the K061 storage areas at the Spartanburg plant, it also failed to follow its own, approved closure plan in that it failed to properly decontaminate the equipment, structures and soils at the plant. Section 265.114 of the federal, interim status closure requirements goes on to provide as follows:

During partial and final closure periods, all contaminated equipment, structures and soil must be properly disposed of, or decontaminated...By removing all hazardous wastes or hazardous constituents during final closure, the owner or operator may become a generator of hazardous waste and must handle that hazardous waste in accordance with all applicable requirements of Part 262 of this chapter.

The equipment, buildings and other structures were not properly decontaminated, as evidenced by the inspection reports and Kestrel sampling activities referenced above. In my opinion, IMC failed to comply with federal, interim status closure performance standards in violation of 40 CFR §§265.111 and 265.114 and further failed to comply with its own, approved closure plan dated July 30, 1986 which provided that these performance standards would be satisfied.

Other waste management areas of the facility were not addressed at all in the closure plan. The wastewater treatment ponds were not properly closed or decontaminated under either RCRA hazardous waste unit standards or corrective action standards; nor was the visible soil contamination and documented groundwater contamination present around these units investigated or remediated in accordance with either set of RCRA groundwater assessment and remediation standards.

The SCDHEC has adopted equivalent closure standards and requirements which can be found in section R.61-79.265 of the SCDHEC regulations. Their regulations include the same notification requirements as discussed above in §R.61-79.265.5; IMC does not appear to have provided a Notification Form as required by this section of the state-based, interim status

⁵⁴Kestrel Memo: Suspected K061 and Crusher Run Lab Results (May 19, 1999).

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operational standards until June, 1983 although its own hazardous waste applications indicate that it started receiving Atlantic Steel's K061 waste sometime in early 1980. Moreover and as noted above, IMC also failed to comply with the closure performance standards enumerated in §§R.61-79.265.111 and R.61-79.265.114 of the SCDHEC regulations.

Not only did IMC violate both federal and state RCRA closure and decontamination standards as well as its own, approved closure plan in the work done prior to the plant's closure in January, 1987, the work performed by Dr. Davis fails to comport with certain EPA-Region 4 guidance relating to proper closure and closure certification activities. According to EPA guidance to SCDHEC dated November 17, 1987 and attached hereto as Exhibit "N", in order for a professional engineer to provide the required certification of closure, they "must have followed the closure process from "beginning to end" including several visits to the site during the closure process...Hence the certification should be based on the Professional Engineer's own observation and knowledge of the closure activities and not just a "walk over inspection" after closure is completed where the applicant tells him how the closure was carried out."

I have several concerns with the work performed by Dr. Davis in his role as the registered, professional engineer who supervised this hazardous waste closure. As a preliminary matter, he was not registered as a professional engineer in the State of South Carolina when he visited the facility to review the ongoing closure activities. He did not obtain his temporary registration until after the closure certification report had been signed and submitted to IMC and to the SCDHEC. More importantly, Dr. Davis has spent the past thirty-five years employed as an economics professor with universities located in Georgia;⁵⁵ not as a professional engineer working in the environmental arena. Not only was he unable to recall what the acronyms "RCRA"⁵⁶ and "CERCLA"⁵⁷ meant, he testified that he was only involved with two plant closures in his entire professional career: the Spartanburg plant closure and a closure or other similar activity at a facility located in Alabama.⁵⁸ He further testified that his only experience with RCRA involved some "collateral reading"; he could not recall any other training or experience with the federal hazardous waste program. It is difficult to believe that IMC could not locate a better-qualified, professional engineer in either the states of Georgia or South Carolina to oversee the closure of those storage and disposal facilities used to manage a listed, hazardous waste.

⁵⁵Deposition of Dr. Sidney Davis, p. 6, lines 6-12 (November 27, 2001).

⁵⁶Deposition of Dr. Sidney Davis, p. 13, lines 17-20.

⁵⁷Deposition of Dr. Sidney Davis, p. 22, lines 20-25; p. 23, lines 1-6.

⁵⁸Deposition of Dr. Sidney Davis, p. 44, lines 8-19.

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Leaving aside his dubious credentials, Dr. Davis did not oversee the closure process at the IMC-Spartanburg plant from "beginning to end". The only work that he did in certifying this closure was to review a couple of documents sent to him by IMC, including the pertinent closure plan,⁵⁹ and visit the facility for 1-3 hours.⁶⁰ He was not told that there were wastewater impoundments in use at the site either before or during his site visit;⁶¹ nor was he informed of the existence of any other solid waste management units at the facility.⁶² He was not even able to testify that he knew that all hazardous wastes had been removed from the site as part of its closure.⁶³ Yet he signed the closure report for this facility as the registered, professional engineer *certifying* that all hazardous wastes had been removed from the site and the facility closed in accordance with its approved closure plan. He did not base his certification on his own observation and knowledge of the closure activities performed by IMC, as required by the attached EPA guidance. Instead, he merely performed the sort of "walk-over inspection" addressed by the EPA's guidance as inadequate for this type of certification.⁶⁴

B. The Closure of the Wastewater Ponds located on the Southeastern Portion of the Plant

The management of wastewater generated by an industrial facility is governed primarily by the federal Clean Water Act and the State of South Carolina's Pollution Control Act which provides pursuant to §48-1-90(a) that "[I]t shall be unlawful for any person, directly or indirectly, to throw, drain, run, allow to seep or otherwise discharge into the environment of the State organic or inorganic matter, including sewage, industrial wastes and other wastes, except as in compliance with a permit issued by the Department." IMC applied for and obtained a wastewater discharge permit from the SCDHEC in the 1970s which regulated the discharge of wastewater into surrounding creeks and streams. This permit is what is commonly called a "no discharge" permit in that it authorizes only the operation of wastewater treatment ponds and appurtenant equipment and not the discharge of waste into Fairforest Creek.

⁵⁹Deposition of Dr. Sidney Davis, p. 14; lines 4-25; p. 15, lines 1-5.

⁶⁰Deposition of Dr. Sidney Davis, p. 15, lines 14-25; p. 16, lines 1-11.

⁶¹Deposition of Dr. Sidney Davis, pgs. 32-34.

⁶²Deposition of Dr. Sidney Davis, p. 33, lines 18-25.

⁶³Deposition of Dr. Sidney Davis, p. 36, lines 6-8.

⁶⁴Deposition of Glenn A. Feagin, Vol. 3, p. 465, lines 8-12.

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The SCDHEC has adopted regulations to implement this provision of the Pollution Control Act and these regulations not only address the permitting requirements for industrial facilities but also the duties and responsibilities of a permit applicant and permittee. These regulations are set forth in §R.61-9 of the SCDHEC regulations. Section R.61-9.122 Part C (relating to Permit Conditions) specifically provides that the permittee must comply with all conditions of the permit; any noncompliance constitutes a violation of the Clean Water Act and Pollution Control Act. IMC's permit does not allow for the seepage of hazardous constituents from wastewater treatment impoundments into the soils and groundwater underlying the site. Nor does its permit allow the discharge of hazardous constituents into and adjacent to Fairforest Creek and other neighboring streams and creeks.

IMC has violated both the Pollution Control Act and associated SCDHEC regulations by allowing the continuing discharge of hazardous constituents from its site and, in particular, the wastewater treatment impoundments, onto soil and into surface waters and groundwaters surrounding the site in violation of §48-1-90(a) of the Pollution Control Act and §R.61-9.122.1(g)(1) of the SCDHEC regulations. The contaminants which have been documented to be present at and under the facility site during recent EPA investigations are found at levels which exceed maximum contaminant levels ("MCLs") in several instances and the EPA has found that these constituent releases present an imminent and substantial endangerment to the surrounding community.

Furthermore, pursuant to §R.61-9.122.41(d) of the SCDHEC regulations, the permittee has a duty to mitigate by taking "all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment." Obviously, IMC has failed to take timely, reasonable or appropriate steps to address the soil and groundwater contamination present at and around the waste ponds on the southeastern portion of the site and its failure to take such steps has resulted in an ongoing and continuing release of hazardous waste constituents into the environment surrounding the facility, thereby endangering the health and safety of nearby residents, a significant number of whom rely on groundwater for their drinking water supplies and other water resource needs.

The SCDHEC water quality regulations also require a permittee to at all times properly operate and maintain in good working order and operate as efficiently as possible all facilities and systems of treatment and control and related appurtenances which are installed or used by the permittee to achieve compliance with the terms and conditions of its wastewater discharge permit. It is equally obvious that IMC used ponds that were not constructed in a manner that would prevent the seepage and other release of plant wastewater into surrounding environmental media. There is no evidence that these ponds were lined with either a clay or geomembrane liner system and/or equipped with a leachate detection system, standards that would have applied to

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their use under RCRA permitting standards. There is, however, evidence in the files that suggests that these ponds not only allowed for subsurface seepage but also overflowed and/or were drained into Fairforest Creek during the plant's operational history. There is also evidence in the documents produced by IMC that the facility and SCDHEC knew that it had contaminated the groundwater underlying the southeastern wastewater ponds before the facility closed in January, 1987. In fact, the SCDHEC specifically instructed IMC to gather additional information on the extent of the nitrate plume by letter dated January 9, 1987. Glenn Feagin, the former environmental manager at the Spartanburg plant, continued to monitor the groundwater wells installed around the ponds until 1991 but only for nitrates. No other action was taken to address the known contamination around the ponds.

Finally, the permittee has a duty to provide information to the SCDHEC pursuant to §R.61-9.122.41(h) of the SCDHEC regulations. This provision states that "[T]he permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit." IMC failed or refused to provide the Department with a groundwater assessment plan, data relating to the discharge of contaminants from the ponds and other closure-related information requested by SCDHEC by letter dated January 9, 1987 within the 30-day period required. The SCDHEC's records indicate that no other action was taken by IMC to address the wastewater impoundments at the site after January 16, 1987, the date on which they notified the SCDHEC that the dismantling and closure of the site was "essentially" completed on January 1, 1987, except for the limited, internal monitoring being performed by Mr. Feagin. Unfortunately, the SCDHEC dropped the ball at this point and failed to follow up demanding that IMC furnish this information and address these issues until 1991 at which time IMC retained RMT, Inc. to conduct a preliminary assessment of the site.

I conclude that IMC failed to follow those environmental, regulatory standards which should have applied to the closure of the impoundments located on the southeastern portion of the site, the RCRA hazardous waste, surface impoundment closure standards set forth in 40 CFR Part 265, Subparts F (relating to groundwater monitoring) and G (relating to closure and post-closure care). It also failed to comply with the newly-adopted, RCRA corrective action requirements applicable to the investigation and remediation of those solid waste management units located at RCRA treatment, storage and disposal facilities, which arguably included the impoundments on the southeastern portion of the site and definitely applied to the old, acid plant impoundments located on the northeastern portion of the plant and the old, on-site landfills used to manage plant trash and solid waste during the first 50-60 years of operation.

I further conclude that IMC not only violated the federal and state hazardous waste standards that applied to the investigation around and closure of the impoundments located on the southeastern portion of the plant, but also the less stringent, state-based, water quality

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standards that applied to the operation and closure of wastewater treatment ponds in South Carolina. Its violation of these three, environmental program requirements had consequences. Soil and sediment/sludge contamination in and around the ponds at the time that the site was closed and subsequently abandoned by IMC in 1987 was allowed to leach into underlying groundwater supplies and from thence towards Fairforest Creek and to run via surface water runoff into Fairforest Creek in an unabated fashion for another fifteen years.

V.

Recent EPA Action taken to Investigate Contamination at IMC-Spartanburg Site

In August, 1997, a neighboring resident, Mr. Harold Mitchell, contacted the EPA-Region 4 offices in Atlanta regarding his concerns about the environmental conditions at the former IMC Fertilizer site. The EPA visited the facility to perform an inspection. In an internal Memorandum dated August 29, 1997 and prepared shortly after the inspection was performed, attached hereto as Exhibit "O", the EPA project manager, Ralph O. Howard, stated that "[I]t is deteriorating badly and is essentially rotting in place (the word "eyesore" was invented for this)." This memo goes on to note that "[t]he place is unsecured and obviously dangerous...in places, 2-3 feet of what appears to be K061 dustlike material...I believe it is probably all K061...The total volume is hard to estimate but it is large." After completing the visit, the EPA project manager advised Mr. Mitchell that he would find out why no actions had been taken, why the site had never (apparently) been properly closed out, what the white, dust-like material was and whether or not an emergency response might be warranted.

On March 2, 1998, the EPA's Emergency Response and Removal Branch performed a sampling survey of the former IMC fertilizer plant. Five samples were collected in and around the facility and were analyzed for total metals (lead, cadmium, chromium, arsenic), nitrates, total phosphorus, chlorinated pesticides and PCBs: IMC-01 (perimeter of the Sturdiyant Unit) contained elevated lead levels of 599 mg/kg (ppm) and total phosphorus at 80,800 mg/kg; IMC-03 (K061 storage area) contained an elevated lead concentration of 357 mg/kg (ppm). Because the samples containing the elevated lead levels were collected inside a building and the results from those samples collected in drainage pathways and minor dump areas did not detect hazardous constituents at "significant" concentrations, this division of the EPA determined that the type of imminent and substantial endangerment situation for which EPA's emergency response and removal program was appropriate did not exist at the site.⁶⁵ However, in view of the groundwater violations documented by the SCDHEC's Bureau of Water, the proximity of the

⁶⁵EPA-Region 4 POLREP: Removal Site Assessment - Final Determination (April 15, 1998); EPA Region 4 letter to SCDHEC Bureau of Solid & Hazardous Waste: International Minerals & Chemical Fertilizer Production Facility (May 5, 1998).

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site to local residents and the community's continuing concern about the site's condition, the EPA decided in May, 1998 to perform a preliminary assessment and site inspection under the legal authority granted it under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), as amended.⁶⁶

The EPA, acknowledging that IMC Agribusiness had submitted a proposal for removing the residual materials left at the site when it was abandoned in 1987, advised IMC immediately after deciding to perform additional site assessment and investigation activities that it needed more information on IMC's proposed removal procedures and demolition process.⁶⁷ IMC Agribusiness responded with a one-paragraph proposal: to remove the residual fertilizer materials in conjunction with the demolition of the building and transport those materials to the IMC-Hartsville plant for re-use in their granulation process.⁶⁸ IMC failed, however, to discuss how their proposal would work in conjunction with CT&C's demolition plans.

On June 8, 1998, the EPA added the IMC-Spartanburg facility to the CERCLIS list of sites potentially eligible for the federal Superfund program and on June 25, 1998, the EPA formally notified the current site owner, Mr. Chris Grant with CT&C, that a preliminary assessment would be performed of the facility under EPA's CERCLA legal authorities to determine whether or not the site posed a threat to human health and the environment. This June 25, 1998 EPA letter, attached hereto as Exhibit "P", specifically requested a copy of the proposed Demolition Plan from CT&C and advised CT&C that "[A]s you may be aware, both the surrounding community and the Awkright Fire Chief have concerns about potential ignition sources and the amount of powdered materials on-site, as well as the potential for air emissions during demolition/dismantling...once OSC Moore indicates that the [demolition] plan is sound, I will advise him in writing that our recommendation to him would be to allow your contractor to proceed."

Despite the EPA's clear warning to wait to demolish the facility until its demolition plan had been approved, CT&C began to tear down the facility on or around June 25, 1998, before its demolition plan had been submitted to or approved by the EPA-Region 4 on-scene coordinator (OSC) or the Awkright Fire Chief and before the required Notice of Demolition was obtained

⁶⁶42 U.S.C. §§9601 *et seq.* (1980); as amended by the Superfund Amendment and Reauthorization Act of 1986 (the "SARA" amendments).

⁶⁷EPA-Region 4 letter to IMC Agribusiness: Former IMC Rainbow Plant (May 13, 1998).

⁶⁸IMC Agribusiness letter to EPA-Region 4: Former IMC Rainbow plant (June 3, 1998).

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from SCDHEC.⁶⁹ According to an SCDHEC Inspection/Investigation Report dated June 26, 1998, attached hereto as Exhibit "Q", local residents began to complain about dust emissions being generated by CT&C's demolition activities almost immediately. Concerns about IMC's failure to remove its residual waste materials prior to these demolition activities were also voiced by Mr. Mitchell at this time. All demolition activities ceased on June 26, 1998 upon an SCDHEC verbal order. SCDHEC then sent a follow-up letter dated July 13, 1998 to CT&C requiring a formal asbestos survey and Notice of Demolition before any further demolition activities could proceed. The SCDHEC also alleged that CT&C had violated state air quality regulations. According to internal correspondence between IMC and its consultant, Kestrel Management Services, approximately 80% of the main building was torn down by CT&C during its unauthorized demolition activities, leaving the remaining structures in a dangerous condition.⁷⁰

The EPA and its consultant, Tetra Tech EM, Inc., performed a site inspection at the IMC facility on July 23, 1998; the Final Preliminary Assessment Report on IMC was issued by Tetra Tech on September 8, 1998. The following hazardous waste constituents were detected at elevated levels in soil samples collected from the site: arsenic, cadmium, copper, lead, magnesium, mercury, nickel, silver, zinc and cyanide.⁷¹ The following organic compounds were also detected at elevated levels in surface soil samples: 2,4-dinitrotoluene, phenanthrene, fluoranthrene, pyrene, benzo (a) anthracene, chrysene, benzo(b/k)fluoranthrene, beta-hexachlorocyclohexane, aldrin, heptachlor epoxide, dieldrin, 4,4-dichlorodiphenylchloroethylene (DDE), endosulfan sulfate, 4,4-dichlorodiphenyltrichloroethane (DDT), alpha-chlordane, gamma-chlordane, Arochlor-1254 (PCB) and Arochlor-1260 (PCB). Several dioxins and furans were also detected in surface soil samples collected near the raw material storage area, the former boiler, the area adjacent to the above-ground storage tank and downgradient of the backfilled wastewater ponds. Finally, radioactive elements were also discovered in surface soils at the site. Based on these results,

⁶⁹SCDHEC Inspection/Investigation Report: Fugitive Dust Emissions from IMC Fertilizer (June 26, 1998); Spartanburg County Fire Marshal Notice of Violation and related correspondence (June 2, 1998); SCDHEC Notice of Violation to C. Grant (July 13, 1998); SCDHEC Notice of Violation to C. Grant (February 10, 1999); SCDHEC Notice of Violation to R. Lemon Bulldozing (February 11, 1999).

⁷⁰Kestrel Management Services ("Kestrel") letter to IMC Global, Inc.: Spartanburg Site (September 16, 1998).

⁷¹EPA Final Preliminary Assessment Report, *supra*. at p. 10; EPA Final Expanded Site Inspection Report, p. 8 (November 16, 2000).

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EPA's contractor recommended further action at the IMC facility.⁷²

IMC approached the EPA in late July, 1998 to discuss the problems with the unapproved demolition activities at the site and on July 30, 1998 retained a consultant, JBR Environmental, to remove the sulfur and fertilizer residuals remaining at the IMC site.⁷³ The EPA, concerned that the removal of this residual waste material could affect the results of their proposed preliminary assessment, informed IMC that they wished to collect samples of the 120+ cubic yards of waste before it was transported off-site for disposal. By letter dated September 16, 1998, attached hereto as Exhibit "R", the EPA reiterated its concerns that "no materials of any potential environmental significance are excluded from evaluation. Therefore, in order to be certain of this, and also in view of the concerns of the surrounding residents, EPA requests that IMC have its contractor store the excavated materials on-site...IMC should refrain from any activities that could be construed as improperly altering the site in a manner prejudicial to our evaluation of it."

In late September, 1998, the EPA and IMC Global conducted additional soil, sediment and groundwater sampling activities to determine whether the facility had the potential to be placed on the National Priorities List for federal Superfund eligibility. Thirteen (13) surface soil and six (6) subsurface soil samples were collected from the facility during the site inspection. The samples collected were split to allow each party to verify the other party's results. A thorough analysis was performed and the results were summarized in an EPA Final Site Inspection Report dated March 22, 1999. The analytical results on the surface soil samples indicated the presence of elevated levels of several inorganic constituent including arsenic, cadmium, cobalt, copper, lead, mercury, nickel, selenium, silver, thallium, vanadium, zinc and cyanide. Organic compounds detected in the surface soil samples included 2,4-dinitrotoluene, phenanthrene, fluoranthrene, pyrene, benzo (a) anthracene, chrysene, benzo(b/k)fluoranthrene, beta-hexachlorocyclohexane, aldrin, heptachlor epoxide, dieldrin, 4,4-dichlorodiphenyl dichloroethylene (DDE), endosulfan sulfate, 4,4-dichlorodiphenyl trichloroethane (DDT), alpha-chlordane, gamma-chlordane, Arochlor-1254 (PCB) and Arochlor-1260 (PCB). Elevated levels of several chlorinated dioxins and furans were also detected as were several radiochemical analytes.⁷⁴ The analytical results on the subsurface soil samples showed elevated levels of the following inorganic, hazardous constituents: arsenic, barium, lead, mercury, selenium and thallium. In addition, the following organic compounds

⁷²EPA Final Expanded Site Inspection Report, p. 8 (November 16, 2000).

⁷³IMC Agribusiness letter to SCDHEC: Grant Textiles Site Removal (July 30, 1998).

⁷⁴EPA Final Site Inspection Report: International Minerals & Chemical Corp., pgs. 27-28 (March 22, 1999).

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were detected in those subsurface, soil samples collected during this site inspection: 2,4-dinitrotoluene, phenanthrene, fluoranthrene, pyrene, aldrin and 4,4-dichlorodiphenyldichloroethylene (DDE). EPA's contractor found in this report that the analytical results from these surface and subsurface soil samples indicated the presence of contamination at the IMC facility.⁷⁵

Six (6) groundwater samples were also collected during this EPA site inspection. Two of the samples were "background" or control samples collected to provide evidence on the naturally-occurring, background concentrations of those heavy metals being evaluated. The remaining four samples were collected from on-site monitoring wells located downgradient of the main building and the backfilled, surface impoundments located on the southeastern portion of the site. The analysis of these groundwater samples indicated the presence of elevated levels of the following inorganic constituents: aluminum, arsenic, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, selenium, vanadium and zinc. Of these, aluminum, arsenic, beryllium, cadmium, iron, manganese, nickel, thallium and zinc exceeded EPA maximum contaminant limits ("MCLs") for drinking water. Organic compounds were also detected in these groundwater samples and included the following hazardous constituents: tetrachloroethene, 2-methylnaphthalene, 2,6-dinitrotoluene, 2,4-dinitrophenol, 2,4-dinitrotoluene, beta-BHC and heptachlor epoxide. Of these, only heptachlor epoxide exceeded the applicable MCL. The report concludes that the groundwater contamination is of concern at the facility as well.

Finally, surface water and sediment samples from Fairforest Creek were collected during this EPA site inspection. Manganese was detected at elevated levels in one of the surface water samples; no organic compounds were detected at elevated levels during the inspection. Sediment samples did not contain elevated levels of either inorganic or organic compounds but did find three, radiochemical analytes: protactinium-234, thorium-234 and uranium-235. These radiochemical analytes were also detected in the soil samples collected during the inspection. The report concluded that the surface water migration pathway is of some concern despite these negative, sampling results because recreational fishing occurs in Fairforest Creek and a wetland area lies adjacent to the creek and the IMC plant. Further action was recommended at the site.

By early 1999, IMC was negotiating with CT&C to repurchase the contaminated site and with the EPA regarding the future investigation and remediation activities that would need to be undertaken to address the site's contaminated condition. By letter dated March 6, 1999 to the EPA, attached hereto as Exhibit "S", IMC Global offered to re-purchase the property, develop a draft demolition work plan for the remaining, on-site buildings and for the disposition of

⁷⁵*Id.* at pgs. 28-29.

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residual, waste materials, develop a community relations plan to address the deteriorating relationship with community residents and to enter into a voluntary consent agreement with EPA regarding future, environmental actions at the site. Although the environmental investigations at IMC-Spartanburg were initially to be overseen by the SCDHEC, SCDHEC decided to hold off on any regulatory action under its state hazardous waste program until the EPA determined whether or not to list the site on the National Priorities List, hereinafter referred to as the "NPL", for federal Superfund eligibility and funding⁷⁶ although it remained involved in overseeing the demolition activities at the site. At this point and at the community's insistence, EPA-Region 4 took the lead on future environmental investigation and remediation activities.

While the EPA was in the process of evaluating the results of its site inspection and finalizing its final report, IMC's consultants were preparing a demolition and materials recovery work plan. This plan was submitted to EPA-Region 4 for its review and approval on March 3, 1999. Kestrel also sampled those residual, waste materials still remaining in and around the main warehouse after the unauthorized demolition activities had been completed by Ray Lemon Bulldozing. A sample of suspected K061 waste was collected by Kestrel and analyzed using EPA TCLP procedures to determine whether or not it was hazardous due to its metal content. The sample failed the TCLP test for both cadmium and selenium with the results showing a concentration⁷⁷ of 3.4 mg/l for cadmium. The regulatory limit for cadmium is 1.0 mg/l. Arsenic levels exceeded EPA risk-based concentrations and zinc was also detected in high concentrations indicating that the substance analyzed was probably K061 waste.⁷⁷ Kestrel moved to reactivate the facility's former EPA hazardous waste identification number so that the remaining K061 waste, which Kestrel estimated to be less than 100 kg., could be removed and transported to a permitted, hazardous waste landfill.

The EPA responded to the draft Demolition and Materials Recovery Work Plan by letter dated May 25, 1999, which is appended hereto as Exhibit "T" and again reminded IMC that it intended to monitor how the work was being performed to verify that no improper materials, environmental media or hazardous substances were removed from the site. A revised demolition plan was submitted by IMC to the EPA and SCDHEC. On July 19, 1999, the SCDHEC issued Compliance Agreement #99-03-A to Vigindustries, Inc. to address the final site deconstruction and demolition activities. A copy of this Compliance Agreement is attached as Exhibit "U". The SCDHEC issued the Notice of Demolition on July 14, 1999 and site demolition activities commenced soon thereafter. All deconstruction activities were completed by December 16,

⁷⁶SCDHEC Memo: IMC-Spartanburg (March 24, 1999).

⁷⁷Kestrel Memo: Suspected K061 and Crusher Run Lab Results (May 19, 1999).

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1999.⁷⁸

After consulting with IMC and the community, EPA conducted an expanded site inspection during the week of January 24, 2000. A report was issued on November 16, 2000 that summarized the results of the expanded site inspection. The expanded inspection continued to document surface and subsurface soil and groundwater contamination at the site and concluded that the potential source areas for the contamination were the three, former wastewater ponds located on the southeastern portion of the site, the four, former ponds located on the northeastern portion of the facility near the abandoned acid plant and an unknown quantity of contaminated soil. While finalizing its review of the expanded site inspection results, the EPA notified SCDHEC that it believed that the IMC-Spartanburg site was "an NPL-caliber site and [we] intend to discuss a path forward with the PRP for this site, Vigindustries, Inc." A copy of EPA's August 25, 2000 letter to SCDHEC is appended as Exhibit "V".

Once the EPA performs a preliminary assessment of a site and performs a hazard ranking, steps which were completed by the EPA in 1999 and 2000, and the site ranks for inclusion on the NPL, either the potentially responsible party ("PRP") or the EPA typically perform a remedial investigation/feasibility study ("RI/FS") to develop remedial alternatives for the eventual cleanup of the site. IMC's subsidiary, Vigindustries, Inc., commenced negotiating in earnest with the EPA over the scope of the recommended RI/FS in late 2000 and early 2001. IMC chose RMT, Inc. to perform a "site reconnaissance" to assist the EPA in determining what the scope of the RI/FS should be and site reconnaissance activities were performed in January and February, 2000. Test pits were dug at locations around the northeastern, eastern and southeastern portions of the facility to confirm the former location of waste management units, specifically former wastewater ponds associated with the acid plant, on-site landfills and the former wastewater ponds located on the southeastern portion of the site.⁷⁹

Based on all of the foregoing environmental assessments results, IMC proposed a scope of work for the RI/FS on May 1, 2001. On July 27, 2001, EPA-Region 4 issued an Administrative Order by Consent to Vigindustries, Inc., EPA Docket #01-3753-C, finding that IMC's Spartanburg facility was eligible for placement on the National Priority (Superfund) List pursuant to §105 of CERCLA⁸⁰ because it had released and was releasing hazardous substances

⁷⁸SCDHEC letter to Vigindustries, Inc.: Compliance Agreement #99-053-A (December 27, 2000).

⁷⁹RMT, Inc. letter to Vigindustries, Inc.: transmittal of site reconnaissance documentation (March 7, 2001).

⁸⁰EPA Administrative Consent Order, Finding of Fact IV. K., p. 3.

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into the environment in a manner that poses an imminent and substantial endangerment to the public health, welfare and the environment;⁸¹ specifically, soil and groundwater analyses documented release(s) of barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, zinc, cyanide, 2,4-dinitrotoluene, phenanthrene, fluoranthrene, pyrene, 2,6-dinitrotoluene and toluene at the site.⁸² A copy of this Consent Order is attached as Exhibit "C". Vigindustries is in the process of implementing the terms and conditions present in that Order today.

⁸¹EPA Administrative Consent Order, Conclusion of Law VI.A., p. 5.

⁸²EPA Administrative Order by Consent, Finding of Fact IV.L., p. 4.